

40F1 3741 SYSTEM TEST MODULE

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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LAST CHG :08 01 74

```

2 *
3 DECK 1
4 SEQ 0
5 X40F START 0
6 TREP
7 CRG X'0A00'
8 *****
9 *
10 *
11 * SECTION PREFACE
12 *****
13 OA01 DC XL2'40F1' PROGRAM ID AND REVISION LEVEL
14 OA02 DC XL1'40' CP END INTERRUPT FLAG
15 OA03 DC XL1'01' CURRENT ROUTINE NUMBER
16 OA05 DC AL2(IH) INTERRUPT HANDLER
17 OA07 DC AL2(RTN01) ADDRESS OF FIRST ROUTINE
18 OA09 DC XL2'0000' ERROR RECORDING TABLE
19 UDT1 DC XL3'4050C0' 3741

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```

21 *****
22 *
23 * THIS ROUTINE WRITES A PATTERN OR READS RECORDS DEPENDING *
24 * ON HOW THE 3741 IS SET UP. IT CHECKS FOR ERRORS. *
25 * IT WAITS FOR 3741 INTERRUPT, READ MODE OR WRITE MODE. *
26 *
27 *****
28
29 OA0D 01 C'ADD 29 RTN01 DC XL1'01' ROUTINE 1
30 OA0E 80 C'AOE 30 DC XL1'80' MANUAL INTERVENTION REQUIRED
31 OA10 FFFF C'AO 31 DC XL2'FFFF' LAST ROUTINE
32
33 *
34 * -----
35 * INITIAL SET UP FOR SYSTEM TEST.
36 *
37
38 LID FUNBIT.LF'NC FUNCTION REG TO X'4000'
39 MVI INT'LG.X'00' CLEAR INTERRUPT FLAG
40
41 *
42 * -----
43 * SET UP FOR I/O LOOP
44 *
45
46 MVI CHAR,X'55' START WITH 00 FIELD
47 MVC BUFF2+127(1),CHAR PROPOGATE 'CHAR' THROUGH BUFFER
48 MVC BUFF2+126(127),BUFF2+127
49 MVC SEQ(5),AL'VCNE INITIALIZE COUNTER (F0F0F1)
50 MVC BUFF2+5(5),SEQ PUT COUNT INTO BUFFER
51
52 * WAIT FOR SOME 3741 SIGNAL BEFORE BEGINNING. THEN IGNORE THAT
53 * FIRST INTERRUPT.
54 BEG SID SDISAB.SCNTRL DISABLE INTERRUPT.
55 MGRDY EQU *
56 SWS SWS3.SLINES WAIT FOR READ OR WRITE MODE ETC.
57 TBF SWS3-1,X'03'
58 TEF SWS3,X'20'+EDS+BIPE+EDR+EDJ+AT OR ERRORS.
59 BF IGA BRANCH IF ONE OR MORE IS ON.
60 B SUP GO TO SUPERVISOR
61 B MGRDY
62
63 IGA MVI IGB+1,X'27' SET UP FOR RB ROUTINE TO IGNORE
64 * THIS 1ST INTERRUPT.
65 SID SRESET.SCNTRL KILL THIS INTERRUPT.
66
67 *
68 * -----
69 * I/O LOOP
70 *
71
72 WLOOP EQU *
73 MVC BUFF1+127(128),BUFF2+127 MOVE PATTERN BUFFER TO I/O BUFF
74 B RM GO TO READ/WRITE ROUTINE
75 B C'<EUF CHANGE PATTERN IN BUFFER
76 CLI UNX,X'FF' SEE IF UNEXPECTED INTERRUPT OCCURRED
77 BE UNE BRANCH IF SO
78 B WLOOP BRANCH BACK FOR NEXT RECORD
79
80 B **4 FILLER
81
81

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ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	83	*****	
	84	* RW *	
	85	*****	
	86	* READ OR WRITE ROUTINE.	*
	87	* READS OR WRITES AS DETERMINED BY 3741 SET UP *	
	88	*****	
	89		
0A75 34 08 0B70	90	RW ST RWR+3.ARR	SET UP RETURN
0A79 F2 07 08	91	IGB JC IGC.X'07'	ALTERED TO IGNORE 1ST INTERRUPT
0A7C C0 87 0CFE	92	B GETINT	WAIT FOR INTERRUPT
	93		
0A80 30 43 1340	94	SNS SNS3.SLINES	SNS I/O TRANSFER LINES
0A84 3C C7 0A7A	95	IGC MVI IGE+1.X'07'	IGNORE 1ST INTERRUPT ONLY
	96	* TEST FOR ERROR INDICATION	
0A8E 39 FC 1340	97	TBF SNS3.X'80'+EDS+BIPE+EOJ+AT	
0A8C C0 90 0B71	98	BF STATER	IF NOT OFF. GO PRINT STATUS ERROR
	99		
0A90 39 03 133F	100	TBF SNS3-1.X'03'	SEE IF READ OR WRITE MODE ON
0A94 C0 10 0BF7	101	BT NCMODE	STATUS ERROR IF BOTH OFF
0A98 38 03 133F	102	TEN SNS3-1.X'03'	SEE IF READ OR WRITE MODE ON
0A9C C0 10 0CE2	103	BT TCMODE	STATUS ERROR IF BOTH ON
	104		
	104		
	104		
	105		
	105		
	105		
	106	* SET UP READ OR WRITE ACCORDING TO 3741	
0AA0 3C 42 0AC3	107	MVI DOSIO+1.SWRITE	
0AA4 38 01 133F	108	TBN SNS3-1.X'01'	IF READ MODE ON AND
0AA8 39 02 133F	109	TBF SNS3-1.X'02'	WRITE MODE OFF.
0AAC F2 10 04	110	JT MOCDEK	THEN GO ON WITH WRITE
0AAF 3C 41 0AC3	111	MVI DOSIO+1.SREAD	OTHERWISE ASSUME READ
	112		
	112		
	112		
0AE3 F3 43 08	0AB3 113	MOCDEK EQU *	
0AB6 31 42 133E	114	SIO RE.SCTL1	RESPOND TO WRITE/READ MODE
0AEA 31 44 0F5C	115	LIO LENGTH.LLCR	LOAD LENGTH COUNT REGISTER (7F)
0ABE C0 87 0DA9	116	LIO BUFF10.LCAR	LOAD DATA ADDRESS REGISTER
	117	B ENABLE	ENABLE INTERRUPTS (MOD 15)
	118		
	119	*	
0AC2 F3 00 00	120	DOSIO SIO X'00'.*--	SIO TO READ OR WRITE
	121	*	
0AC5 3C 02 0C6F	122	MVI WSEC.2	
0AC9 C1 42 0AD0	123	WAITBY TIO ISESY.TBSY	BRANCH IF BUSY
0ACD F2 87 0C	124	J SNETBY	
0AD0 C0 87 0C1C	125	ISBSY B WAIT	GO WAIT FOR BUSY TO DROP
0AD4 C0 87 0CB3	126	B TOOBSY	IF TIMEOUT. HALT ERROR
0AC8 C0 87 0AC5	127	B WAITBY	
	0ADC 128	SNETBY EQU *	NOT BUSY
	129		
0ADC C0 87 0CFE	130	B GETINT	WAIT FOR INTERRUPT
	131		
0AE0 30 42 1340	132	SNS SNS3.SLINES	SNS I/O TRANSFER LINES
0AE4 0C 01 133E 1348	133	MVC SNS2(2).SNS2I	OBTAIN STATUS (SENSED PREVIOUSLY)
	134		
	135	* CHECK FOR NO-CP	
	136		
0AEA 38 04 133D	137	TBN SNS2-1.X'04'	QUIT IF NO-OP BIT ON.
0AE6 C0 90 0B09	138	BF NOCPOK	
0AF2 F2 43 50	139	SIC RSR+RECJ.SCTL1	SENSE RESPONSE/EOJ
0AF5 C0 87 021A	140	B PRINT	NO-OP'D SIO
CAF9 CE	0AF9 141	DC XL1'C6'	
0AFA 28	0AFA 142	DC AL1(MSG6-MSG6B)	
0AFE 10F1	0AFC 143	DC AL2(MSG6)	
0AFD 4082	0AFE 144	DC XL2'4082'	

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0AFF C0 87 0222	145	B HALT	
0BC3 40E2	0B04 145	HT82 DC XL2'4082'	
0B05 C0 87 0A35	147	B BEG	RETURN TO BEGINNING
	148		
	149	* CHECK FOR DATA TRANSFER PARITY ERROR	
	150		
0B09 38 08 133D	151	NOUPOK TBN SNS2-1.X'08'	DATA XFER PARITY ERROR ?
0B0C F2 90 17	152	JF NOCTPE	
0B10 F3 43 90	153	SIO RSR+BOPE.SCTL1	SENSE RESPONSE / BUS OUT PARITY ERR
0B13 C0 87 021A	154	B PRINT	BUS OUT PARITY ERROR
0B17 CE	0B17 155	DC XL1'C6'	
0B18 4F	0B18 156	DC AL1(MSG7-MSG7B)	
0B19 1140	0B1A 157	DC AL2(MSG7)	
0B1E 4031	0B1C 158	DC XL2'4081'	
0B1D C0 87 0222	159	B HALT	
0B21 40E1	0B22 160	HT81 DC XL2'4081'	
0B23 C0 87 0A35	161	B BEG	RETURN TO BEGINNING
	162		
	163	* CHECK STATUS ERROR	
	164		
0B27 39 EC 1340	0B27 165	NOCTPE EQU *	
0B28 C0 90 0B71	166	TBF SNS3.X'80'+EDS+BIPE+EOJ+AT	CHECK FOR STATUS ERRORS
0B2F 3D FF 133E	167	BF STATER	IF NOT OFF. PRINT STATUS ERROR
0B33 F2 01 30	168	CLI SNS2.X'FF'	LCR = FF ?
0B36 3C 01 0C6F	169	JE ADK	
0B3A C0 87 0C1C	170	MVI WSEC.1	
0B3E C0 87 0B4E	171	B WAIT	WAIT
0B42 C0 87 0B3A	172	B *+E	ONE
0B46 F3 43 10	173	E W1	SECOND
0B49 C0 87 021E	174	SIC RSR.SCTL1	RESPONSE TO LCR ERROR
0B4D 01	175	B UNPACK	SET UP FOUND LCR VALUE
0B4E 123E	0B4D 176	DC XL1'1'	
0B50 1198	0B4F 177	DC AL2(SNS2)	
	0B51 178	DC AL2(MSG9)	
	179		
0BE2 C0 87 021A	180	B PRINT	
0B56 C6	0B56 181	DC XL1'C6'	
0B57 33	0B57 182	DC AL1(MSG9-MSG9B)	
0B58 1196	0B59 183	DC AL2(MSG9)	
0B5A 4C88	0B5B 184	DC XL2'4088'	
0B5C C0 87 0222	185	B HALT	LCR ERROR
0B60 408E	0B61 186	HT88 DC XL2'408E'	
0B62 C0 87 0A35	187	B BEG	RETURN TO BEGINNING
	188		
	189	***	
	190	***	
	191	***	
	192		
0B66 C0 87 0DA9	193	ADK B ENABLE	ALLOW NEXT INTERRUPT
0B6A F3 43 08	194	SIC RE.SCTL1	RESPONSE (SIO SUCCESSFUL)
0B6C C0 87 0000	195	RWR B *-4	RETURN TO CALLER

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197 *****
198 *   SUBPCUTINES      *
199 *
200 *****
201
202 *****
203 * STATER
204 *****
OB71 205 STATER EQU      *
      206   ST   STATPR+3,ARR      SET UP RETURN
      207
208 * FOR END CF JCB, RESPONSE IS GIVEN. THEN CONTROL IS RETURNED TO
209 * ROUTINE WHICH WAITS FOR A SIGNAL FROM 3741.
210   TBN   SNS3,EOJ           IF ITS EOJ ONLY
211   TEF   SNS3,X'FF'-EOJ     THEN RESPOND
212   JF    STAT1             OTHERWISE, GO ON WITH ERROR
213   SIO   RE,SCTL1         RESPOND TO EOJ
214   B     T-GRDY           GO BACK AND WAIT FOR READINESS
215
OB87 216 STAT1 EQU      *
      217   SIC   RE,SCTL1         RESPOND
      218   B     **4
      219   B     UNPACK
OB92 220   DC    IL1'2'
OB94 221   DC    AL2(SNS3)
OB96 222   DC    AL2(STATMG)
      223   B     PRINT
OB98 224   DC    XL1'C2'
OB9C 225   CC    IL1'35'
OB9E 226   DC    AL2(STATMG)
OBA0 227   DC    XL2'4083'      STATUS ERROR
228
229 *
230 * SHIFT OFF BITS AND PUT IN MESSAGE DESCRIBING THAT BIT AND PRINT
231 *
232 *
233   LA    STAB,XR1
234   MVC   WORK(2),SNS3      PUT SNS3 INTO WORK AREA
235 SPLDOP ALC WORK(1),WCRK
236   BOL   SEPT
237   LA    SLEN(,XR1),XR1
238   B     SPLDOP
OBBC 239 SETPT EQU      *
      240   ST   P0,XR1
      241
242   TEN   SNS3,AT
243   JF    NOTAT
244   CLI   DDSIO+1,SWRITE
245   JNE   NOTAT
246   B     PRINT
247   DC    XL1'81'
OB02 247   DC    AL1(MSG14-MSG14B)
OB03 248   DC    AL2(MSG14)
OB05 249   DC    AL2(MSG14)
250   B     PRINT
251   DC    XL1'86'
OB0A 251   DC    AL1(MSG15-MSG15B)
OB0B 252   DC    AL1(MSG15-MSG15B)
OB0D 253   CC    AL2(MSG15)
254   J     HLTAT
OBE1 255 NOTAT EQU      *
      256   B     PRINT
      257   DC    XL1'86'
OBE5 258   DC    AL1(SLEN)
OBE6 259   DC    AL2(8-8)
OBE8 260 P0   DC    AL2(8-8)
261
262 HLTAT B     HALT
OBE9 262 HLTAT B     HALT
OBE0 263 HT83 DC    XL2'4083'

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
OBEF C0 87 0A35          264   B     BEC      RETURN TO BEGINNING
265
OBF3 C0 87 0000          266 STATRR B     *-+    RETURN
267
267
267
268 *****
269 * NOMODE *
270 *****
OBF7 271 NOMODE EQU      *
      272   ST   NCMCDR+3,ARR      SET UP RETURN
      273
274   B     UNPACK
OBF8 C0 87 021E          274   DC    XL1'2'
OBF9 02   DC    AL2(SNS3)
OC00 1340          276   DC    AL2(MSG13)
OC02 1245          277   DC
278
OC04 C0 87 021A          279   B     PRINT
OC08 C6   DC    XL1'C6'
OC09 33   DC    AL1(MSG13-MSG13B)
OC0A 1245          281   DC    AL2(MSG13)
OC0C 408C          282   DC    XL2'408C'
OC0E C0 87 0222          283   B     HALT
OC12 408C          284   DC    XL2'408C'
OC14 C0 87 0A35          285 HT8C DC    BEG
286
287
288 NCMODR B     *-+    RETURN
289 *****
290 * WAIT *
291 *****
292 * SUBROUTINE WAITS 1 MILLI SEC PER CALL. AFTER EACH SEC IT
293 * DECREMENTS SECOND COUNT.
294 * SAMPLE LINKAGE --
295 *
296 *           MVI WSEC,5      BEFORE LOOP, SET UP # OF SECONDS
297 *           LOOP B WAIT     <--- LINKAGE TO TIMEOUT ROUTINE
298 *           B TIMEOUT      <--- WAIT RETURNS HERE FOR TIMEOUT
299 *           B LOOP         <--- WAIT RETURNS HERE NORMALLY
300 *
301 *****
302
OC1C 303 WAIT EQU      *
      304   ST   WAITR+3,ARR      SET UP RETURN
      305   B     SUF            GO TO SUPERVISOR
      306   CLI   WSEC,0        NEW COUNT VALUE ?
      307   JE    OLDSEC
      308   MVC   WSECA(2),WSEC  PUT NEW SEC COUNT INTO WORK
      309   SLC   WSEC(2),WSEC   ZERO THE MAIN SEC COUNT.
      310   MVC   WCNT(2),W1000  SET UP TO DO 1000 TIMES
      311   CLC   *(256),*      WAIT 1 MILLI
      312   CLC   *(60),*
      313   SLC   WCNT(2),W0001  DO 1000 TIMES
      314   JNZ   WAITR        THROUGH LOOP
      315   MVC   WCNT(2),W1000  SET UP TO DO ANOTHER 1000 MILLI SEC
      316   SLC   WSECA(2),W0001  DECREMENT NUMBER OF SEC TO WAIT
      317   BZ    WAITR        IF IT TIMED OUT, RETURN DIRECTLY
      318   WAITR ALC WAITR+3(2),W0004  RETURN TO CALLER +4
      319   WAITR B     *-+
      320
OC6D 321 WCNT DC    XL2'9000'
OC6F 322 WSEC DC    XL2'0600'
OC71 323 WSECA DC   XL2'0000'
OC73 324 W1000 DC   IL2'1000'
OC75 325 W0001 DC   IL2'1'
OC77 326 W0004 DC   IL2'4'
327
327

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328 *****
329 * CHGBUF *
330 * *
331 *****
332 * CHANGE BUFFER FOR WRITE *
333 * OR READ. *
334 * PATTERN SEQUENCE, 55 AA FF 01 00 55 AA FF 01 00 55 ...
335 *****
336
OC78 34 08 0CB2          337 CHGBUF ST  CH<BUR+3,ARR      FOR RETURN
OC7C 3D 01 1319          338 CLI CHAR,X'01'          IF CHAR WAS JUST 01. FORCE 00
OC80 F2 01 07            339 JNE CHG1
OC83 3C 00 1319          340 MVI CHAR,X'00'
OC87 F2 87 0D            341 J NORAP                      DON'T INCREMENT
OC8A 0E 00 1319 1310    OC8A 342 CHG1 EQU *
OC90 F2 20 04            343 ALC CHAR(1),INCVL
OC93 3C 01 1319          344 JNOL NORAP
OC97 0C 00 0F5A 1319    OC97 345 MVI CHAR,X'01'          AFTER FF FORCE TO 01
OC9D 0C 7E 0F59 0F5A    346 NORAP ECU *
OC9F 06 04 132F 132A    347 MVC BUFF2+127(1),CHAR
OCA9 0C 04 0EE2 132F    348 MVC BUFF2+126(127),BUFF2+127 PROPOGATE
OCAF 0C 87 0000          349 AZ SEQ(5),NUMONE          INCREMENT EBCDIC RECORD COUNTER
351                      350 MVC BUFF2+7(5),SEQ        AND PUT IT INTO BUFFER
352 CHGBUR B  **          351                      RETURN TO CALLER
353
353
353
354 *****
355 * TOBSY *
356 *****
357 * 3741 BUSY TOO LONG *
358 * *
359 *****
360
OCB3 34 08 0CCE          361 TOBSY ST  TOCBSR+3,ARR      FOR RETURN
OCB7 0C 87 021A          362 B PRINT                      COMPARE ERROR ON RECORD XXX
OCBB C2                  OCBB 363 DC XL1'C2'
OCBC 27                  OCBC 364 DC AL1(MSG10-MSG10B)
OCBD 11C2                OCBE 365 DC AL2(MSG10)
OCBF 40BE                OCC0 366 DC XL2'40BE'
OCC1 0C 87 0222          367 B HALT                      BUSY TOO LONG
OCC7 40BE                OCC6 368 HTBE DC XL2'40BE'
OCC9 0C 87 0A35          369 B BEG                      RETURN TO BEGINNING
OCCB 0C 87 0000          370 TOBSR B  **          RETURN
371
371
371
372 *****
373 * SUP *
374 *****
375 * BRANCHES TO SUPERVISOR IF IN SYSTEM TEST MODE.
376 * OTHERWISE RETURNS TO CALLER
377 *****
378
OCCF 34 08 0CE1          379 SUP ST  SUPR+3,ARR      FOR RETURN
OCC3 3D 00 0A00          380 CLI X'0A00',X'40'        SEE IF WE ARE RELOCATED.
OCD7 F2 21 04            381 JE SUPR                   IF NOT, GO RIGHT BACK.
OCCA 0C 87 0A0A          382 B ENTRY                   GO TO SUPERVISOR
383
OCDE 0C 87 0000          384 SUPR B  **          RETURN
385
385
385
386 *****

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
387 * TOMODE *
388 *****
389 * COME HERE IF BOTH READ *
390 * AND WRITE MODES ON. *
391 *****
392
OCE2 0C 87 021A          393 TOMODE B  PRINT          BOTH MODES ON
OCE6 C6                  OCE6 394 DC XL1'C6'
OCE7 2B                  OCE7 395 DC AL1(MSG8-MSG8B)
OCE8 1168                OCE9 396 DC AL2(MSG8)
OCEA 40BE                OCEB 397 DC XL2'40BE'
398
OCEC 0C 87 0222          399 B  HALT
OCF0 40BE                OCF1 400 HT8E DC XL2'40BE'
OCF2 0C 87 0A35          401 B  BEG                      GO BACK TO BEGINNING
402
402
402
403 *****
404 * GETINT *
405 *****
406 * WAIT FOR AN INTERRUPT *
407 * *
408 *****
409
OCF6 34 08 0D94          410 GETINT ST  GETR+3,ARR      FOR RETURN
OCFA 3C 07 0C6F          411 MVI WSEC,7                WAIT 2 SEC FOR INTERRUPT
412
OCFE 3D 40 0A00          413 * CHECK IF USING INTERRUPTS OR JUST THE PENDING BIT.
OD02 F2 81 07            414 CLI X'00',X'40'          ARE WE RELOCATED ?
OD05 3D C5 0200          415 JE HNGPND                IF NOT, WAIT FOR PENDING ONLY
OD09 F2 81 23            416 CLI SMCD,C'E'          ARE WE MODEL 15.
417 JE HNGINT              IF NOT, WAIT FOR PENDING ONLY
418
419 * WAIT FOR INTERRUPT PENDING
420 HNGPND SNS  SNS2,SSTAY
421 MVC SNS2I(2),SNS2      PUT SNS 2 INTO SNS2I FOR USE LATER
422 * AS IF SNS2 BY INTERRUPT ROUTINE
423 TBN SNS2-1,X'20'      IS INTERRUPT PENDING BIT ON ?
424 JT INTOC              WAIT UNTIL IT DOES
425 B  WAIT
426 B  NOIERR
427 B  HNGPND
428 INTOC SID  SRESET,SCNTRL  RESET IT WHEN IT COMES
429 J  PEND
430
431 * WAIT FOR INTERRUPT
432 HNGINT CLI  INTFLG,X'FF'  INTERRUPT RECEIVED YET ?
433 JE PEND
434 B  WAIT
435 B  NOIERR
436 B  HNGINT
437
438 PEND MVI  INTFLG,X'00'  CLEAR INT FLAG
439 B  GETR                  GO RETURN TO CALLER
440
441 * INTERRUPT OR INTERRUPT PENDING NOT FOUND.
442 * FIRST SEE IF DEVICE IS ON LINE
443
444 NOIERR SNS  SNS3,SLINES  FIRST CHECK IF ON-LINE
445 TBN SNS3-1,X'0A'      IF ON-LINE.
446 JT  ONLN              THEN GO ON

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
-----
CD55 C0 87 0222          447      B      HALT
CD59 4C80                 OD5A 448 HT80 DC    XL2*4080*
CD5E C0 87 0A35          449      B      BEG
                               450
                               451 ONLN  EQU   *
OD5F 451 ONLN  EQU   *
                               452 * CHECK IF USING INTERRUPTS OR JUST THE PENDING BIT.
                               453 CLI    X'A00',X'40'
                               454 JE     NDFND
                               455 CLI    SMCD,C'E'
                               456 JNE   NDFND
                               457 J      NOINT
                               458
                               459
OD70 C0 87 021A          OD74 461 DC    XL1*C6*
CD74 C6                   OD75 462 DC    AL1(MSG1-MSG1B)
OD75 28                   OD77 463 DC    AL2(MSG1)
OD7E 0FFD                 OD79 464 DC    XL2*4084*
CD7E 4C84                 OD79 465 J      NOINT
OD7A F2 87 0A            466
                               467 NCINT  B      PRINT
OD7D C0 87 021A          OD81 468 DC    XL1*C6*
OD81 C6                   OD82 469 DC    AL1(MSG2-MSG2B)
OD82 4F                   OD84 470 DC    AL2(MSG2)
OD83 1C4C                 OD86 471 DC    XL2*4084*
OD85 4C84                 472
                               473 NOINT  B      HALT
OD87 C0 87 0222          OD8C 474 HT84 DC    XL2*4084*
OD8E 4084                 475      B      BEG
OD8C CC 87 0A35          476 GETR  B      *-+
OD91 CC 87 0000          477
                               478
                               479 *****
                               480 * UNE
                               481 *****
                               482 * UNEXPECTED INTERRUPT
                               483 *
                               484 *****
OD95 486 UNE  ECU   *
                               487      B      PRINT
OD99 488 DC    XL1*C6*
OD9A 489 DC    AL1(MSG11-MSG11B)
OD9C 490 DC    AL2(MSG11)
OD9E 491 DC    XL2*4087*
                               492
                               493 HNI    B      HALT
OD9F C0 87 0222          OCA4 494 HT87 DC    XL2*4087*
ODA3 4087                 495      B      BEG
ODA5 C0 87 0A35          496
                               496
                               496
                               496
                               497 *****
                               498 * INTERPUT ENABLNG ROUTINE
                               499 *
                               500 *****
                               501
                               502 * INTERPUT FLAGS
                               503 * EXPFLG
                               504 * INTFLG
                               505 *
ODAS 34 C8 0DC5          506 ENABLE ST  EN#BLR+3,ARR
ODAD 3D 40 0A00          507 CLI    X'A00',X'40'

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
-----
CDB1 F2 81 0E            508      JE     ENBLR
OD84 3D C5 0200          509      CLI    SMCD,C'E'
OD88 F2 01 07            510      JNE   ENBLR
OD8E 3C FF 1311          511      MVI   EXPFLG,X'FF'
OD8F F3 40 02            512      SIO   SENAB,SCNTRL
ODC2 C0 87 0000          513 ENBLR B      *-+
                               514
                               515 *****
                               516 * INTERPUT HANDLING ROUTINE
                               517 *
                               518 *****
                               519
ODCE 3D 42 1348          ODC6 520 IM  EQU   *
ODCA 3E 20 1347          521      SNE   SNE21,ESTAT
ODCE CC 90 0A0E          522      TBN   SNE21-1,X'20'
ODD2 3D FF 1311          523      BF     NGTME
ODDE 3C 00 1311          524      CLI    EXPFLG,X'FF'
ODCA F2 81 04            525      MVI   EXPFLG,X'00'
ODDD 3C FF 1312          526      JE     *-+
ODE1 3C FF 131A          527      MVI   UNX,X'FF'
ODEE C0 87 0A12          528      MVI   INTFLG,X'FF'
ODE9 F3 40 05            529      B      RESTOR
ODEC C0 87 0A16          530      SIC   SDISAB+SRESEY,SCNTRL
                               531      B      NXTINT
                               532
                               532
                               532
                               532
                               533 *****
                               534 * DUMP1
                               535 *
                               536 *****
                               537 * DUMPS CONTENTS OF BUFFER 1
                               538 *
                               539 *****
ODFO 34 08 0E13          540 DUMP1 ST  DUMP1R+3,ARR
ODFA C0 87 021E          541      B      UNPACK
ODFB 40                   ODF8 542 DC    IL1*64'
ODF9 0E9A                 ODF4 543 DC    AL2(BUFF1+63)
ODFE 0BFF                 ODFC 544 DC    XL2*8FF'
ODFC C0 87 021A          545      B      PRINT
OE01 A1                   OE01 546 DC    XL1*A1'
                               547
                               548      B      UNPACK
OE02 C0 87 021E          549      DC    IL1*64'
OE06 40                   OE05 549 DC    AL2(BUFF1+127)
OE07 0E0A                 OE08 550 DC    XL2*8FF'
OE09 0BFF                 OE0A 551 DC    PRINT
OE0B C0 87 021A          552      B      PRINT
OE0F A6                   OE0F 553 DC    XL1*A6'
OE10 C0 87 0300          554 DUMP1R B  *-+
                               555
                               555
                               555
                               555
                               556 *****
                               557 * DUMP2
                               558 *
                               559 *****
                               560 * DUMPS CONTENTS OF BUFFER 2
                               561 *
                               562 *****
OE14 34 08 0E37          563 DUMP2 ST  DUMP2R+3,ARR
OE18 C0 87 021E          564      B      UNPACK
OE1C 40                   OE1C 565 DC    IL1*64'
OE1D 0F1A                 OE1E 566 DC    AL2(BUFF2+63)
OE1F 0BFF                 OE20 567 DC    XL2*8FF'

```

40F1 3741 SYSTEM TEST MODULE

ERR LCC CEJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0E21 C0 E7 021A	568	B		PRINT
0E25 A1	569	DC		XL1'A1'
	570			
0E24 C0 E7 021E	571	B		UNPACK
0E2A 40	572	DC		IL1'64'
0E2B 0F5A	573	DC		AL2(BUFF2+127)
0E2D 08FF	574	DC		XL2'8FF'
0E2F C0 E7 021A	575	B		PRINT
0F32 A6	576	B		XL1'A6'
0E34 C0 E7 0000	577	DUMP2R	B	*-*

FROM OWN BUFFER  
UNPACK SECOND HALF OF 128 BYTE REC  
DCP BUFFER  
FROM OWN BUFFER  
RETURN TO CALLER

40F1 3741 SYSTEM TEST MODULE

ERR LCC CEJECT CODE	ADDR	STMT	SOURCE	STATEMENT
	579			*****
	580			*
	581			MESSAGES
	582			*
	583			*
	584			*
	585			*****
0E2B C9607640E3D9C1D5 0F5A	586	STATMG DC		CL35'I-O TRANSFER LINES -SENSE 3- XXXX'
0E4C E2C6C5D940D3C9D5	586			
0E4E CEE24C60E2C5D5E2	586			
0E50 C54CF360406040E7	586			
0E5B E7E7E7	586			
	587			
0E5B	588	BUFF1	EQU	*
0EDA	589	DS		CL12B READ BUFFER
0EDB	590	BUFF2	EQU	*
0EDE	591	DS		CL12C READ BUFFER
0FEB 40	592	DC		CL1' *
	593			
0F5C 0E5D	594	BUFF1B	DC	AL2(BUFF1) LEFT END OF READ FIELD
	595			
	596			
0F5E C1E3E3C1C3C8D4C5 0F71	596	STAB	DC	CL20*ATTACHMENT RST *
0F66 D5E34CD9E2E3A040	596			
0F6E 40404040	596			
0F72 CEDEC440D6C440C4 0F85	597	DC		CL20*END CF DATA SET *
0F7A C1E3C140E2C5E340	597			
0F82 40404040	597			
0F86 F3F7F4F140C2E4E2 0F99	598	DC		CL20*3741 BUS IN PRTY ERR*
0F8E 40C9D540D7D9E3E8	598			
0F96 40C5D5D9	598			
0F9A C5D5C440D6C640D9 0FAD	599	DC		CL20*END OF RECORD *
0FA2 CEC3D6D5C4404040	599			
0FAA 40404040	599			
0FAE C5D5C440D6C640D1 0FC1	600	DC		CL23*END CF JOB *
0FB6 DEC240404C404040	600			
0FBE 40404040	600			
0FC2 F3F7F4F140C1E3E3 0FD5	601	DC		CL20*3741 ATTENTION RECD *
0FCA C5D5E3C9D6D540D9	601			
0FD2 C5D8C440	601			
	602			
	603	MSG1B	EQU	*-1
0FD6 60C9D5E7C5D9D9E4 0FFD	604	MSG1	DC	CL40*--INTERRUPT PENDING- BIT DID NOT COME ON *
0FDE D7E340D7C5D5C4C9	604			
0FE6 DEC76040C2C9E340	604			
0FEE C4C9C440D5D6E340	604			
0FFE C2D6D4C54CD6D54C	604			
	605	MSG2B	EQU	*-1
0FFE C6D5E3C5D9D9E4D7 1024	606	DC		CL39*INTERRUPT LEVEL 5 DID NOT OCCUR AFTER 7*
10C6 E340D3C5E5C5D340	606			
100E FE40C4C9C440D5D6	606			
1016 E340D6C3C3E4D940	606			
101E C1C6E3C5D540F7	606			
1025 40E2C5C3D6C5C4E2 104C	607	MSG2	DC	CL40' SECONDS.
102D 4B4040404C404040	607			
103E 4040404040404040	607			
103D 4040404040404040	607			
104E 4040404040404040	607			
	608	MSG3B	EQU	*-1
104D 4C404C4040	609	MSG3A	DC	CL2*
10E2 40D4D6C4C540D6D5 1079	610	MSG3	DC	CL40' MODE ONLY EXPECTED ON.
105A C3E840C5E7D7C5C3	610			
1062 E2C5C440D6D54B40	610			
106A 4040404040404040	610			
1072 4040404040404040	610			
	611	MSG4B	EQU	*-1

IBM MAINTENANCE DIAGNOSTIC PROGRAM

IBM MAINTENANCE DIAGNOSTIC PROGRAM

40F1 3741 SYSTEM TEST MODULE

40F1 3741 SYSTEM TEST MODULE

ERR LOC DEJECT CODE	ADDR	STMT	SOURCE STATEMENT
107A	D5CEC1C440D4D6C4	10A1	612 MSG4 DC CL40*READ MODE FOUND ON.
10E2	C540C6D6E4D5C44D		612
108A	DEDE4B404C404040		612
1092	4040404040404040		612
109A	40404C4040404040		612
10A2	E6D9C9E3CE40D4D6	10A1	613 MSG5B EQU *-1
10AA	C4C54CC6DE4D5C4	10C9	614 MSG5 DC CL40*WRITE MODE FOUND ON.
10E2	40D6DE4B4C404040		614
10EA	40404C4040404040		614
10C2	4040404040404040		614
10CA	E2C9D640D5D660D6	10C9	615 MSG6B EQU *-1
10D2	D74B404040404040	10F1	616 MSG6 DC CL40*SID NO-OP.
10DA	4040404C4C404040		616
10E2	40404C4040404040		616
10EA	4C4040404C404040		616
10F2	C4C1E3C140E3D9C1	10F1	617 MSG7B EQU *-1
10FA	D5E2C6C5D54CD9C5	111B	618 DC CL39*DATA TRANSFER REGISTER PARITY ERROR.
1102	C7C9E2E3CED94CD7		618
110A	C1D9C9E3E240C5D9		618
1112	D5D6D9484C4C40		618
1119	4040D5D6E3C56040	1140	619 MSG7 DC CL40* NOTE- 3741 RECORDS MUST BE 128 BYTES.
1121	F3F7F4F140D9C5C3		619
1125	DEDC4E240D4E4E2		619
1131	E340C2C540F1F2F8		619
1139	40C2E8E3CE24B40		619
1141	C2C6E3C840D9C5C1	1140	620 MSG8B EQU *-1
1149	C440C1D5C440E6D9	1168	621 MSG8 DC CL40*BOTH READ AND WRITE MODE WERE ON.
1151	C9E3C540D4D6C4C5		621
1159	40EECED9C540D6D5		621
1161	4E4040404C404040		621
1165	D3C5D5C7E3C840C3	1168	622 MSG9B EQU *-1
1171	D6E4D5E340D9C5C7	118F	623 DC CL39*LENGT+ COUNT REGISTER ERROR. EXPECTED
1175	C9E2E3C5D540C5C9		623
1181	D5D6D94840C5E7D7		623
1189	C5C3E3C5C44040		623
1190	C6C6E840C6D6E4D5	1198	624 MSG9 DC CL12*FF. FOUND XX*
119E	C440E7E7		624
119C	F2F7F4F140C2E4E2	1198	625 MSG10B EQU *-1
11A4	E840E3D6DE40D3D6	11C2	626 MSG10 DC CL39*3741 BUSY TOO LONG.
11AC	D5C74E4040404040		626
11B4	4C4040404C404C40		626
11BC	4040404040404040		626
11C3	E4C5CE5E7D7C5C3E3	11C2	627 MSG11B EQU *-1
11CE	C5C440C9D5E3C5D9	11EA	628 MSG11 DC CL40*UNEXPECTED INTERRUPT.
11D3	D5E4D7E34B4C4040		628
11CE	4040404040404040		628
11E3	40404C4040404040		628
11EB	60C5D5C440D6C640	11EA	629 MSG12B EQU *-1
11F3	D1D6C26040D3C9D5	1212	630 MSG12 DC CL40*-END CF JOB- LINE NOT UP
11FE	C540C5D6E340E4D7		630
1203	4040404040404040		630
120B	40404C4040404040		630
1213	D9C5C1C440D4D6C4	1212	631 MSG13B EQU *-1
121E	C540C1D5C440E6D9	1239	632 DC CL39*REAC MODE AND WRITE MODE BOTH OFF.
1223	C9E3C540D4D6C4C5		632
122E	40C2D6E3C840D6C6		632
1233	C64B40404C4040		632
123A	E2D5E240F3406040	1245	633 MSG13 DC CL12*SNS 3 - XXXX*
1242	E7E7E7E7		633

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
1246	C1E3E3C5D5E3C9D6	1245	634 MSG14B EQU *-1
124E	D540C9C5D8E4C9D9	126C	635 DC CL39*ATTENTICN REQUIRED - IF 3741 DISPLAYS*
125E	C5C44C6C4C4040C9		635
125E	C640F3F7F4F140C4		635
1266	C5E2D7D3C1E8E2		635
126D	4060F1F0C5F1E040	1294	636 DC CL40* -10E1- ERROR. THEN THIS IS NOT A 3741 *
1275	C5D9D9D6D56B40E3		636
127D	C8C5C40E3C8C9E2		636
128E	4CC9E240D5D6E340		636
128D	C140F3F7F4F14040		636
1295	C6C1C9D3E4D9C54B	12A0	637 MSG14 DC CL12*FAILURE.
129D	40404040		637
12A1	E2D7C1C3C940C1E5	12A0	638 MSG15B EQU *-1
12A9	C1C9D3C1C2D3C540	12C7	639 DC CL39*SPACE AVAILABLE ON 3741 WAS USED UP. *
12B1	D6D540F3F7F4F140		639
12B9	E6C1F240E4E2C5C4		639
12C1	40E4D74B404040		639
12C8	D9C5E2C5E340E2E8	12EF	640 DC CL40*RESET SYSTEM/3 HALT. RESTART 3741.
12D0	E2E3C5D461F340C8		640
12D8	C1D3E36B40D9C5E2		640
12E0	E3C1D9E34CF3F7F4		640
12F8	F14B404040404040		640
12F0	4040404040404040	12F0	641 MSG15 DC CL12*
12FE	40404040		641
12FC	40D9C5C1C4	1300	642 CREAD DC CL* READ*
1301	E6D9C9E3C5	1305	643 CWRITE DC CL*WRITE*
			644 *****
			645 *
			646 *
			647 * DC'S
			648 *
			649 *
			650 *
			651 *****
			652
130E 0000		1307	653 S DC XL2*0000* * CONTAINS SWITCHES AS SENSED
1308 00		1308	654 S1 DC XL1*00* *
1309 00		1309	655 S2 DC XL1*00* * KEEP TOGETHER AND LENGTH 6
130A 00		130A	656 S3 DC XL1*00* *
130B 00		130B	657 S4 DC XL1*00* *
130C 0001		130D	658 ONE DC XL2*0001*
130E 0002		130F	659 TWO DC XL2*0002*
1310 55		1310	660 INCVAL DC TL1*85*
1311 00		1311	661 EXPFLG DC XL1*00*
1312 00		1312	662 UNX DC XL1*00*
1313 0000		1314	663 PSRSV DC XL2*0000*
131E 0000		1316	664 PIARV DC XL2*0000*
1317 0D95		1318	665 UNEB DC AL2(UNE)
1319 00		1319	666 CHAR DC AL1(*-*)
131A 00		131A	667 INTFLG DC AL1(*-*)
131E 00		1318	668 RECCTR DC AL1(*-*)
131C F0F0		131D	669 CTBUF DC XL2*F0F0*
131E F0F0		131F	670 Z0 DC XL2*F0F0*
1320 F0F1		1321	671 Z1 DC XL2*F0F1*
1322 F0F2		1323	672 Z2 DC XL2*F0F2*
1324 0000		1325	673 CTR DC XL2*0000*
132E F0F0F0F0F1		132A	674 NUMONE DC XL5*F0F0F0F0F1*
132B 0000000000		132F	675 SEQ DC XL5*0000000000*
1330 00		1330	676 QWORK DC XL1*00*
1331 0000		1332	677 WORK DC XL2*0*
1333 0000		1334	678 DC XL2*0*
133E 007F		1336	679 LENGTH DC XL2*007F*
1337 0000		1338	680 X0000 DC XL2*0000*
1339 4000		133A	681 FUNBIT DC XL2*4000*
133B 0000		133C	682 SNS1 DC XL2*0000*
133D J000		133E	683 SNS2 DC XL2*0000*

ADDRESS OF FORCED HALT DUE TO UNEXP INT

BUMPS \*CHAR\*

255-L (EG. 255-128 = 127 = X\*7F\*)

EB-1 BIT 0 \*6 USEC PULSES

IBM MAINTENANCE DIAGNOSTIC PROGRAM

IBM MAINTENANCE DIAGNOSTIC PROGRAM

40F1 3741 SYSTEM TEST MODULE

40F1 3741 SYSTEM TEST MODULE

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ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
133F 0000             1340 684 SNS3   DC     XL2'0000'
1341 0000             1342 685 SNS4   DC     XL2'0000'
1342 0000             1344 686 SNS5   DC     XL2'0000'
1343 0000             1346 687 SNS6   DC     XL2'0000'
1344 0000             1348 688 SNS2I  DC     XL2'0000'
1347 0000
689 *****
690 *
691 *           EQLATES
692 *
693 *
694 *
695 *****
696
697 *****
698 *           STANDARD DCP EQUATES *
699 *****
0222 700 HALT   EQU   X'222'
0216 701 LINK  EQU   X'216'
021A 702 PRINT EQU   X'21A'
0212 703 TEST  EQU   X'212'
021E 704 UNPACK EQU  X'21E'
0020 705 PIAR  EQU   X'20'
0200 706 SMOD  EQU   X'200'
0001 707 XR1   EQU   01
0002 708 XR2   EQU   02
0008 709 ARR   EQU   X'08'
0004 710 PSR   EQU   X'04'
00C0 711 IAR1  EQU   X'0C'
0084 712 IAR5  EQU   X'08'
0020 713 PIAR  EQU   X'20'
0226 714 PACK  EQU   X'226'
022A 715 LOAD  EQU   X'22A'
0080 716 BIT0  EQU   X'80'
0040 717 BIT1  EQU   X'40'
0020 718 BIT2  EQU   X'20'
0010 719 BIT3  EQU   X'10'
0008 720 BIT4  EQU   X'08'
0004 721 BIT5  EQU   X'04'
0002 722 BIT6  EQU   X'02'
0001 723 BIT7  EQU   X'01'
0208 724 SBYTE0 EQU  X'0208'
020A 725 SBYTE2 EQU  X'020A'
0208 726 SBYTE3 EQU  X'0208'
0020 727 SSW02 EQU   X'20'
0008 728 SSW04 EQU   X'08'
0001 729 SSW07 EQU   X'01'
0080 730 SSW10 EQU   X'80'
0040 731 SSW11 EQU   X'40'
0020 732 SSW12 EQU   X'20'
0010 733 SSW13 EQU   X'10'
0008 734 SSW14 EQU   X'08'
0004 735 SSW15 EQU   X'04'
0002 736 SSW16 EQU   X'02'
0001 737 SSW17 EQU   X'01'
0080 738 SSW18 EQU   X'80'
0040 739 SSW19 EQU   X'40'
0020 740 SSW1A EQU   X'20'
0001 741 SSW2F EQU   X'01'
742
0A0A 743 ENTRY  EQU   X'A0A'
0A0E 744 NOTME  EQU   X'A0E'
0A12 745 RESTOR EQU   X'A12'
0A16 746 NXTINT EQU   X'A16'
747
0014 748 SLEN   EQU   20
749
750 *****
751 *           EQUATE LSE FOR PROGRAM CODING *

```

PROGRAM INSTRUCTION ADDRESS REGISTER  
LOCATION OF CPU MODEL LETTER.

SENSE SWITCH BYTE 2  
SENSE SWITCH BYTE 3  
MANUAL INTERVENTION  
BYPASS NON-ERROR PRINTING (DCP)  
LOAD AND GO (DCP)

SUPERVISOR LINKAGE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

752 *****
0003 753 H1    EQU   X'03'
0071 754 H2    EQU   X'71'
003C 755 HF    EQU   X'3C'
007C 756 HE    EQU   X'7C'
0068 757 HL    EQU   X'68'
006F 758 H0    EQU   X'6F'
0076 759 H2    EQU   X'76'
0057 760 H3    EQU   X'57'
0018 761 H4    EQU   X'18'
0050 762 H5    EQU   X'50'
007D 763 H6    EQU   X'7D'
0007 764 H7    EQU   X'07'
007F 765 H8    EQU   X'7F'
005F 766 H9    EQU   X'5F'
003F 767 HA    EQU   X'3F'
0079 768 HB    EQU   X'79'
006C 769 HC    EQU   X'6C'
0073 770 HD    EQU   X'73'
0004 771 HUP    EQU   X'04'
0040 772 HDN    EQU   X'40'
773 *****
774 *
775 *           EQUATES FOR 3741
776 *
777 *****
778
779 * TIO
780
0040 781 TNR    EQU   X'40'           TIO NOT READY OR ERROR
0042 782 TBSY  EQU   X'42'           TIO FOR BUSY
783
784 * LIO
785
0041 786 LFUNC EQU   X'41'           LIO FUNCTION REGISTER
0042 787 LLCR  EQU   X'42'           LIO LENGTH COUNT REGISTER
0044 788 LDAR  EQU   X'44'           LIO DATA ADDRESS REGISTER
0045 789 LDIR  EQU   X'45'           LIO DATA TRANSFER REGISTER
790
791 * SIO
792
0040 793 SCNTRL EQU  X'40'           SIO CONTROL INTERRUPT STATUS
0041 794 SREAD EQU  X'41'           SIO READ
0042 795 SWRITE EQU X'42'           SIO WRITE
0043 796 SCTL1 EQU  X'43'           SIO I/O CONTROL 1
0044 797 SCTL2 EQU  X'44'           SIO I/O CONTROL 2
798
799 * SNS
800
0041 801 SFUNR  EQU   X'41'           SNS FUNCTION REGISTER
0042 802 SSTAT EQU   X'42'           SNS CCR + STATUS (STAT=EB2)
0043 803 SLINES EQU  X'43'           SNS I/O TRANSFER LINES
0044 804 SDAR  EQU   X'44'           SNS DATA ADDRESS REGISTER (DAR)
0045 805 SDXFR  EQU   X'45'           SNS DATA TRANSFER + DIAG (DIAG=EB2)
806
807 * R-BYTES FOR SIO 0
808
809 *
810 810 SRESET EQU  X'01'           SIO I-R RESET INTERRUPT
811 811 SENAB  EQU  X'02'           SIO I-R ENABLE INTERRUPTS
812 812 SDISAB EQU  X'04'           SIO I-R DISABLE INTERRUPTS
813 813 SNOBSY EQU  X'08'           SIO I-R FORCE NOT BUSY
814 814 SUPINT EQU  X'10'           SIO I-R SET INTERRUPT REQUEST
815
816 * ERROR MASKS SNS-3
817
818 *

```



40F1 3741 SYSTEM TEST MODULE

ERR LCC OBJECT CODE

ADDR STMT SOURCE STATEMENT

0040	819	EDS	EQU	X*40*	
0020	820	BIPE	EQU	X*20*	
0010	821	EOR	EQU	X*10*	
0008	822	EOJ	EQU	X*08*	
0004	823	AT	EQU	X*04*	
	824	*			
	825	*			
	826	*			
	827	*			
	828	*			
			I/C SELECT		
			LINE #		
			1,2		
0004	829	RSU	EQU	X*04*	3
0008	830	RE	EQU	X*08*	4
0010	831	RSR	EQU	X*10*	5
0020	832	REDD	EQU	X*20*	6
0040	833	REDD	EQU	X*40*	7
0080	834	BOPE	EQU	X*80*	8
FFFF	835	END			

END OF DATA SET  
 BUSS IN PARITY ERROR  
 END OF RECORD  
 END OF JOB  
 3741 ATTENTION

MEANING  
 NOT USED  
 SET UP ERROR (READ VS. WRITE MODE)  
 RESPONSE  
 SENSE RESPONSE  
 END OF DATA SET  
 END OF JOB  
 BUS OUT PARITY ERROR

40F1 3741 SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ACK	A	004	0866	0193	0169
ARR	C	001	000E	0709	0090 0206 0272 0304 0337 0361 0379 0410 0506 0540 0563
AT	C	001	0004	0823	0058 0097 0166 0242
BEG	A	003	0A35	0054	0147 0161 0187 0254 0286 0369 0401 0449 0475 0495
BIPE	C	001	002C	0820	0058 0097 0166
BIT0	C	001	0080	0716	
BIT1	C	001	004C	0717	
BIT2	C	001	0020	0718	
BIT3	C	001	0010	0719	
BIT4	C	001	000E	0720	
BIT5	C	001	0004	0721	
BIT6	C	001	0002	0722	
BIT7	C	001	0001	0723	
BOPE	C	001	0080	0E24	0153
BUFF1	A	001	0E58	0588	0073* 0543 0550 0594
BUFF18	A	002	0F5D	0594	0116
BUFF2	A	001	0E0B	0590	0047* 0048 0048* 0050* 0073 0347* 0348 0348* 0350* 0566 0573
CHAR	A	001	1319	0666	0046* 0047 0338 0340* 0343* 0345* 0347
CHGRUF	A	004	0C78	0227	0075
CHGBUR	A	004	0CAF	03E2	0337*
CHG1	A	001	0C8A	0342	0339
CREAD	A	005	1300	0E42	
CTPUF	A	002	131D	0669	
CTR	A	002	132E	0E73	
CWRITE	A	005	130E	0E42	
DCSID	A	003	0AC2	0120	0107* 0111* 0244
DUMP1	A	004	0DFC	0E40	
DUMP1R	A	004	0E10	0E54	0540*
DUMP2	A	004	0E14	0863	
DUMP2R	A	004	0E34	0577	0563*
EDS	C	001	0040	0819	0058 0097 0166
ENABLE	A	004	0DA9	0506	0117 0193
ENABLR	A	004	0DC2	0513	0506* 0508 0510
ENTRY	C	001	0A0A	0743	0282
EOJ	C	001	000E	0822	0058 0097 0166 0210 0211
EOR	C	001	0010	0821	0058 0097
EXPFLG	A	001	1311	0661	0511* 0524 0526*
FUNBIT	A	002	133A	0681	0038
GETINT	A	004	0CF6	0410	0092 0130
GETR	A	004	0D91	0476	0410* 0439
HA	C	001	003F	07E7	
HALT	C	001	0222	0700	0145 0159 018E 0262 0284 0367 0399 0447 0473 0493
HB	C	001	0075	07E8	
HC	C	001	006C	07E9	
HD	C	001	0073	0770	
HON	C	001	0040	0772	
HE	C	001	007C	075E	
HF	C	001	003C	0755	
HGROY	A	001	0A38	0C55	0061 0214
HL	C	001	0068	0757	
HLTAT	A	004	0BE9	02E2	0254
HNGINT	A	004	0D2F	0432	0417 0436
HNGFND	A	004	0D0C	0420	0415 0427
HNI	A	004	0D9F	0453	
HT8C	A	002	0C13	0285	
HT8E	A	002	0CCE	0368	
HT80	A	002	0D5A	0448	
HT81	A	002	0B22	0160	
HT82	A	002	0BC4	0146	
HT83	A	002	0BEE	0263	
HT84	A	002	0D8C	0474	
HT86	A	002	0CF1	0400	
HT87	A	002	0DA4	0454	
HT8E	A	002	0B61	0186	
HUP	C	001	0004	0771	
HZ	C	001	0071	0754	

40F1 3741 SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL T LEN VALUE DEFN REFERENCES

H0	C	001	006F	0758	
H1	C	001	0003	0753	
H2	C	001	0076	0759	
H3	C	001	0057	0760	
H4	C	001	001B	0761	
H5	C	001	005D	0762	
H6	C	001	007D	0763	
H7	C	001	00C7	0764	
H8	C	001	007F	0765	
H9	C	001	005F	0766	
IAR1	C	001	00CC	0711	
IAR5	C	001	0084	0712	
IGA	A	004	0A50	0063	0059
IGR	A	003	CA75	0051	0063* 0095*
IGC	A	004	0A24	0095	0091
IM	A	001	0DC6	0520	0016
INCVL	A	001	1310	0660	0343
INTFLC	A	001	131A	0667	0039* 0432 0438* 0528*
INTOC	A	003	0D29	0428	0424
ISBSY	A	004	0AD0	0125	0123
LCAR	C	001	0044	0788	0116*
LDTR	C	001	0045	0789	
LENCTH	A	002	1336	0679	0115
LFUNC	C	001	0041	0786	0038*
LINK	C	001	0216	0701	
LLCR	C	001	0042	0787	0115*
LOAD	C	001	022A	0715	
MCDEOK	A	001	0A53	0113	0110
MSG1	A	040	0FFD	0604	0462 0463
MSG1B	A	001	0FDE	0603	0462
MSG10	A	039	11C2	0626	0364 0365
MSG10B	A	001	119B	0625	0364
MSG11	A	040	11EA	0628	0489 0490
MSG11B	A	001	11C2	0627	0489
MSG12	A	040	1212	0630	
MSG12B	A	001	11EA	0629	
MSG13	A	012	1245	0633	0277 0281 0282
MSG13B	A	001	1212	0631	0281
MSG14	A	012	1240	0637	0248 0249
MSG14B	A	001	1245	0634	0248
MSG15	A	012	12FB	0641	0252 0253
MSG15B	A	001	12A0	0638	0252
MSG2	A	040	104C	0607	0469 0470
MSG2B	A	001	0FFD	0605	0469
MSG3	A	040	1079	0610	
MSG3A	A	005	1051	0609	
MSG3B	A	001	104C	0608	
MSG4	A	040	10A1	0612	
MSG4B	A	001	1079	0611	
MSG5	A	040	10C9	0614	
MSG5B	A	001	10A1	0613	
MSG6	A	040	10F1	0616	0142 0143
MSG6B	A	001	10C9	0615	0142
MSG7	A	040	1140	0619	0156 0157
MSG7B	A	001	10F1	0617	0156
MSG8	A	040	1168	0621	0395 0396
MSG8B	A	001	1140	0620	0395
MSG9	A	012	119B	0624	0178 0182 0183
MSG9B	A	001	1168	0622	0182
NCDTPE	A	001	0B27	0165	0152
NCIERR	A	004	0D4A	0444	0426 0435
NCIHT	A	004	0D87	0473	0465
NCINT	A	004	0D7D	0467	0457
NCMCDE	A	001	0BF7	0271	0101
NCMCDR	A	004	0C18	0288	0272*
NCOPDK	A	004	0B09	0151	0138

40F1 3741 SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL T LEN VALUE DEFN REFERENCES

NOPND	A	004	0D70	046C	0424 0426
NCRAP	A	001	0C97	0346	0341 0344
NOTAT	A	001	0BE1	0255	0243 0245
NCTME	C	001	0A0E	0744	0523
NUMCNE	A	005	132A	0674	0049 0349
NXTINT	C	001	0A1E	0746	0531
GLDSEC	A	006	0C7D	0311	0307
ONE	A	002	130D	06E8	
ONLN	A	001	0D5F	0451	0446
PO	A	002	0BEE	0260	0240*
PACK	C	001	022E	0714	
PENC	A	004	0D42	0428	0429 0433
PIAR	C	001	0020	0705	
PIARSA	A	002	1316	0664	
PRINT	C	001	021A	0702	0140 0154 0169 0223 0245 0250 0257 0279 0362 0393 0460 0467 0487 0345 0557 0568 0575
PSR	C	001	0004	0710	
PSRSVA	A	002	1314	0662	
PIIAR	C	001	0020	0713	
QWORK	A	001	1330	0676	
RE	C	001	000E	0730	0114 0194 0213 0217
RECCTR	A	001	131B	0666	
REDD	C	001	0020	0830	
REGJ	C	001	0040	0833	0139
RESTOR	C	001	0A12	0745	0529
PSR	C	001	0010	0831	0129 0153 0174
RSU	C	001	0004	0829	
RTN01	A	001	0A0D	0029	0017
RW	A	004	0A75	0090	0074
PWR	A	004	0B6D	0195	0090*
S	A	002	1307	06E2	
SBYTE0	C	001	020B	0724	
SBYTE2	C	001	020A	0725	
SBYTE3	C	001	020B	0726	
SCNTRL	C	001	0040	0793	0054 0065 0428 0512 0530
SCTL1	C	001	0043	0756	0114 0139 0153 0174 0194 0213 0217
SCTL2	C	001	0044	0797	
SCAR	C	001	0C44	0804	
SDISAB	C	001	0004	0812	0054 0530
SDXFR	C	001	0045	0805	
SENAB	C	001	0002	0811	0512
SENS	A	002	134E	06E7	
SEQ	A	005	132F	0675	0049* 0050 0349* 0350
SETPT	A	001	0B8C	0239	0236
SFUAR	C	001	0041	0801	
SLEN	C	001	0014	0748	0237 0259
SLINES	C	001	0043	0802	00E6 0094 0132 0444
SMOD	C	001	0200	0706	0416 0455 0509
SNOESY	C	001	000E	0813	
SNOTEY	A	001	0ADC	0128	0124
SNS1	A	002	133C	06E2	
SNS2	A	002	133E	06E3	0133* 0137 0151 0168 0177 0420* 0421 0423
SNS2I	A	002	134E	06E8	0133 0421* 0521* 0522
SNS3	A	002	1340	06E4	0056* 0057 0058 0094* 0097 0100 0102 0108 0109 0132* 0166 0210 0211 0221 0234 0242 0276 0444* 0445
SNS4	A	002	1342	06E5	
SNS5	A	002	1344	06E6	
SPLCOP	A	006	0BAE	0235	0238
SREAD	C	001	0041	0794	0111
SRESET	C	001	0001	0810	0065 0428 0530
SSTAT	C	001	0042	0802	0420 0521
SSW02	C	001	0020	0727	
SSW04	C	001	000E	0728	
SSW07	C	001	0001	0729	
SSW1A	C	001	0020	0740	
SSW10	C	001	008C	0730	

40F1 3741 SYSTEM TEST MODULE

40F1 3741 SYSTEM TEST MODULE

CROSS-REFERENCE

OBJECT CARD LISTING

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SSW11	C	001	0040	0731	
SSW12	C	001	0020	0732	
SSW13	C	001	0010	0733	
SSW14	C	001	0008	0734	
SSW15	C	001	0004	0735	
SSW16	C	001	0002	0736	
SSW17	C	001	0001	0737	
SSW18	C	001	0080	0738	
SSW19	C	001	0040	0739	
SSW20	C	001	0001	0741	
STAB	A	020	0F71	0596	0233
STATER	A	001	0B71	0205	0098 0167
STATMG	A	035	0E5A	0588	0222 0226
STATRR	A	004	0B73	0266	0206*
STAT1	A	001	0B87	0216	0212
SUP	A	004	0CCF	0379	0060 0305
SUPINT	C	001	0010	0814	
SUPR	A	004	0CDE	0384	0379* 0381
SWRITE	C	001	0042	0755	0107 0244
S1	A	001	130E	0654	
S2	A	001	1309	0655	
S3	A	001	130A	0656	
S4	A	001	130B	0657	
TESY	C	001	0042	0782	0123
TEST	C	001	0212	0703	
TNR	C	001	0040	0781	
TMCDE	A	004	0CE2	0393	0103
TGDSR	A	004	0CCB	0370	0361*
TGDSY	A	004	0CB3	0361	0126
TWO	A	002	130F	0659	
UCT1	A	003	0A0C	0019	
UNE	A	001	0D5E	0486	0077 0665
UNEE	A	002	131B	0665	
UNPACK	C	001	021E	0704	0175 0219 0274 0541 0548 0564 0571
UNX	A	001	1312	0662	0076 0527*
WAIT	A	001	0C1C	0302	0125 0171 0425 0434
WAITBY	A	004	0AC9	0123	0127
WAITR	A	004	0C6B	0319	0304* 0317 0318*
WAITRN	A	006	0C62	0318	0314
WCNT	A	002	0C6D	0321	0310* 0313* 0315*
WLOCP	A	001	0A57	0072	0078
WORK	A	002	1332	0677	0234* 0235 0235*
WSEC	A	002	0C6F	0322	0122* 0170* 0306 0308 0309 0309* 0411*
WSECA	A	002	0C71	0323	0308* 0316*
W0001	A	002	0C7E	0325	0313 0316
W0004	A	002	0C77	032E	0318
W1	A	004	0B3A	0171	0173
W1000	A	002	0C73	0324	0310 0315
XR1	C	001	0001	0707	0233* 0237 0237* 0240
XR2	C	001	0002	0708	
X0000	A	002	133E	0680	
X40F	A	001	0000	0005	
Z0	A	002	131F	0670	
Z1	A	002	1321	0671	
Z2	A	002	1323	0672	

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

THE CHARACTER ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

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GBK GBD PN 55 58777 EC 824870 40F - 3741 SYS T EST MOD ***** 8488E488 400A0 0 ***** 40F10000
T.OY?E|E 87FB-4 DA& F **81EJK :| LFT1ND1U< ED1U<-RCSY<AAK 7D2Y< B&XHBQSHA0 QE *E=8U40F10001
T.-Z;A -D2*3E 6 0E1( +&L|3X8D4C U Z&0H*3BGBT- 8/02:84 ACG8+6-1 E0H* BODH18SE1< |B0EB|1D40F10002
T.-C(BXP /018|> LDXBACRP /0ZP0H* H|L&HB7C2A0T /C3 &<C<L&C0GBXY9*A( 0I BOYIB REJD (B&MA78<40F10003
T.O<B7C9 1<*0A .3-CD3* D 3S|DH H02-A385 /<*8/ D|DDH0*(CBCEBD30 1J ' ) B&.IA4REJD (B&MA:440F10004
T.O_0+*(D-< CO BCF*AE-.E&Y*GH* <G<BGC.| /C.I0H* <'TACD4 < JK=D4- 8AA< B&.HKM/GJU NC-YC13*40F10005
T(EXT0I .B-(CM<B G /.FHAC1&H. /0H S&H. /0Y5+ -L|-H E&*(CU<EG /,FLIE EHG /0HSEHG B0 ;F-8C91H40F10006
T<_M/OY5+;0L&KB 8B7D*1<=BYCO| D <8BEGCA3 /0_F0H* .+?(CD<BG /8AD38 JW&BG -_H2D)FJM +B-QB3D840F10007
T<O>HFXG3DR_ S<B G SI S<BGBTP /06 Z84<M0H* C&MB*Q BEA( +-*L&|H&A*( CB<BGBTT3&0 112< -EA DM3X40F10008
T< >9E<BGB8# /0H ; / ( CV. /0HE0S< +DUBCO-D|&0AD3H LE E D3HL<X&E-#3 K JL /0 .12M/G1X NC&XQD.Y40F10009
T( ?>B:XA &?Y+ & LE|H&FT5BBX|2 J| /0HE-N&XKY<BG /D FC1.#BY*0H*BFYQ M C /0HSEH< H1X 8B&MA70<40F10010
T<-C/OH*H(*BG 4B 050H*BG-HLEAI E0H*BFXG3CUN T<B G SI T<BGBTP /0 ( -<E&BG OHA0 MD-XC:2840F10011
T. 1+<C@* 17BYD KC C<*&1?C0D<801 ?C D<8&13C-8<|80 *CL*<801CC0D<8&1 5 B0D1S6-G/YQEAH +C MA:JY40F10012
T<82 8-C&C D<8&1 3C0D<8&150HD<E B ACFX<)&BG ***** C: A 84B 2 2|8DLF-H<B00E/H +C -FOK-40F10013
T.-2? 8*8 A<R&Y* (C- LFJ<8&S D| D LF&0 C5YLF&1=CEU |0-CDD2&LH-3DC>H L.8 .KXXIKD-F1U NC-0E8-40F10014
T(-3W/0 (-<3XB G /.BI1GB&H# /0H S&H# /0Y50H* CE HC+D*E Y 8YDD0H* HBXFG C /0HE1- SF-8F*L 40F10015
T<-4RHA&Y&H&S /0H S&H&S /0Y5(-VCO GCF&E Y 8YDG|*H E |H&H3ABD38< J( HD388HAK' CH>.B- 0D-888JU40F10016
T<85.8/ <0H*CG<B GCM. /04<84 8BY* L|-8LF?HAC<BGCA3 /0EFOH*(.30 D1. /06J<D<.2XXH1B QC-YF90040F10017
T(-8BD4 8AA<*8/ H0H*8HUB 0H*F(L5 B-C2-8Y*1&H 8-D C&Y*(0H*BF&QYC*5 /|HGBXBG /,FLO .D-MA8/Y40F10018
T(&68CC1 /<EG SI /<BGBTP /0 OH* BFXQYD:2 /8BG SI /8BGBTM4B 7E|M H |HACT7E -C2 BU VF&4A*2Y40F10019
T<07X 8*2*1<J&4 B0H* CABD4-8HA( G0I HCT7*D1D8 AK J8YDD|8LD73*D1. /0YK&4 E0 .12 *EA E:3*40F10020

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40F1 3741 SYSTEM TEST MODULE

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

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T(2E5/0Y0(-+D8B G /9 CZYH*8BG /D /0H*8GU +6-T*0H* BFD$ /0 (-+(8B G /9 C1YH*8BG CD DF04F#440F10021
Y(09E /D/0H*8GU |0-T*0H*8FD$ /0 20C0E+(R0)PS1XP R6(|15*PS&FCS1)P S1MC3QDA E+-X9=* ***** 1$ 840F10022
T+E=ME 98C;|T0*| H5CPN84CR8>( EDA EDCE5*J EXR 1<G TOMCS1:( EDA E|| 7*|E 0>LS&<XN&(- R80 BLRD40F10023
T+-*|:DCEE)XES*J 5XF E*PC5_XD&DA EDA E<FNICC01UC J5X1 EDA EDA EDA 8*-48MCA8=|E5;| 15_M :T440F10024
T+/ H6(XEE<J 0<X N8DPR6;LP84CP1)P C2)PGDCE2:( 1<X D&(FC84CC5_LEE($ N&<XN8DPR6;LP84C L1;M E;J*40F10025
T+/AE1)( *PCD2*J 5)ST&(SC0=LR&<G F8DPR6;) EXPCS_F DBU_ EDA EDA EDA EDA EDA EDA EDA EDA EDA *8<40F10026
T+/E EDA EDA EDA EDA E(L01<N 5_P L:DCE9*-E0=|E1EC 05M_ EDA ECA EDA EDA EDA E(XE0*J 5(G ES840F10027
T+/B#1<N 1_GU5*J 5_N_ EDA EDA EDA EDA EDA EDA ECA 9_X188N 5(8D1MC F5>LN1DC05M_ EDA EDA 3C040F10028
T+/C6&EDA EDA ECA ECA EDCS2)R 5)R -5_)_ EDA EDA ECA ECA EDA EDA EDA EDA EDA EDA EDA 1<G TOM P3840F10029
T+/D18*XA5;.F1)V 6*PG2;.T1)V 58G R2;|Y6<PRE)8RK4A ECA 5)ST10A 8*- 48MCR1*|06*LS&(L U8>< 83X40F10030
T+/EX&<.EE|G2=DC 8;+|EBU_ 0_ST2DC R1*GD&<GN1DCWE*X T1MCS5LE&+8E6*N 5_N_ EDA EDA E(| EE** 6E-40F10031
T+/FX8E/ 0*8U5:( 6*PG2;.T1)V 1)X R5_V_<CPX&EPC8&F D&DCF1W_ 1_GU5*J 9=-3*ML1&<.U8>/ 8*Q M2Y40F10032
T+/GS5UCL_PGK4A EDA ECA EDA EDA EDA EDA 9(PE9+- E0=|E1DC15;|EE)X US=(.EDA EDA EDA EDA :JX40F10033
T+/H)EDA EDA EDA -1)PD&(8F6(G00WA 48XN1MCNE>( 9() EDA EDA EDA EDA EDA 6*PA1DCM5XL E&<D 6Z&40F10034
T+/I05*J 9_X188N 5(8C1MCB5>|ME($ F1U_ EDA E+.NELC 3&FA 9=-X98GT8&P N88X05MCR1)TU2)X E1D 6S440F10035
T+/L0CA E<XF&|| 7*|E 1<X55*|A:+I 0(G01-E-E<PR6)8 RE4CT2<PN&+|H2;I 2;I 5)ST&<E 8*- 48M 8R<40F10036
T+/+E<8A2)U6*N .EDA E+.P0*|E&<G V0*XL0+.L1MCO&WC 3*ML1&+8ABUC8XP DE+LPK4A E(XE8XP TE+H 0#440F10037
T+/<I;+.T1)J/B4C H0)|TE4CR1;.T0)X TE||7*.EDA ECA ECA EDA EDA EDA E(XE0*LV6*XT1& ***** R.440F10038
T+J(C ***** & BNC ***** GN ***** B|C 08|C18|M |C08|C 1 ..... A " A ..... +:E 4#F10039
TAA(H ..... 7M440F10040
E****E7**=DC*PHS =*7M&F| | C FX ASC R A S0 Q ..... 11350908741 121748#U40F10041

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----- LAST PAGE -----

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LCC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	
	2	*		LAST CHG:08 01 74	
	3		DECK	4	
	4		SEQ	0	
000C	5	L3741	START	0	
	6		TREP		
0A00	7		ORG	X'A00'	
	8	*****			
	9	*	3741 FUNCTION TEST	WITHOUT DIAGNOSTIC CONNECTOR *	
	10	*****			
	11	*	SECTION PREFACE	*****	
	12	*****			
	13	DC	XL2'4011'	PROGRAM ID AND REVISION LEVEL	
0A01	14	DC	XL1'00'	SECTION FLAGS	
0A02	15	DC	XL1'01'	CURRENT ROUTINE NUMBER	
0A03	16	DC	XL2'0000'	RESERVED	
0A04	17	DC	AL2(BEGIN)	FIRST ROUTINE ADDRESS	
0A06	18	DC	XL2'FFFF'	RESERVED	
0A07	19	DC	XL2'405000'	SECTION PREFACE UNIT DEF. TABLE	
0A08	20				
0A09	21	*****			
0A0C	22	*	INTRODUCTION	TELL OPERATOR TO DO SYSTEM RESET *	
	23	*****			
0A0D	24	BEGIN	DC	XL1'01'	
0A0E	25	DC	DC	XL1'00'	
0A0F	26	DC	DC	AL2(RTN01)	
	27				
0A11	28	BEGINN	EQU	*	
0A12	29	B	PRINT	PRINT BEGINNING INSTRUCTIONS	
0A13	30	DC	DC	XL1'41'	
0A14	31	DC	DC	AL1(MSG1-MSG18)	
0A15	32	DC	DC	AL2(MSG1)	
0A16	33	DC	DC	XL2'40E0'	
0A17	34	B	PRINT		
0A18	35	DC	DC	XL1'06'	
0A19	36	DC	DC	AL1(MSG2-MSG28)	
0A1A	37	DC	DC	AL2(MSG2)	
0A1B	38				
0A1C	39	MVI	PRT+1,X'40'	BUILD 'CLEARING' BYTE.	
0A1D	40	MVC	PRT(91),PRT+1	CLEAR PRINT AREA.	
0A1E	41	LA	RTN01,XR1	RESTORE RTN01 ADDRESS.	
0A1F	42	ST	FRTN,XR1		
0A20	43	CLI	HPLXX,X'E0'	CURRENT HALT A -E0- ?	
0A21	44	JE	ALTER	JUMP IF SO.	
0A22	45	MVI	HPLXX,X'E0'	SET UP FOR A -E0- HALT.	
0A23	46	J	**7		
0A24	47	ALTER	MVI	HPLXX,X'E1'	SET UP FOR A -E1- HALT.
0A25	48				
0A26	49	B	HALT	PROGRAM HALT -E0- OR -E1--	
0A27	50	HPLXX	DC	XL2'40E1'	
0A28	51				
0A29	52	B	BEGINN	REPEAT MESSAGE IF NO SYSTEM RESET.	

ERR LCC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
	54	*****		
	55	*	RTN01	*
	56	*****		
	57	*		
	58	*	ROUTINE C1	TEST 3741 FOR NOT READY.
	59	*		
	60	*****		
0A51	61	RTN01	DC	XL1'01'
0A52	62	DC	DC	XL1'00'
0A53	63	DC	DC	AL2(RTN02)
	64			
0A55	65	B	PRINT	PRINT NOT READY TEST HEADING.
0A56	66	DC	DC	XL1'45'
0A57	67	DC	DC	IL1'24'
0A58	68	DC	DC	AL2(TORDY)
0A59	69	DC	DC	XL2'40A1'
	70			
0A5F	71	B	QUES	TEST FOR SSW 10.
0A60	72	HPL	X'3C',X'3C'	HALT -FF- IF ON.
	73			
0A6E	74	TIC	LINK,X'40'	BRANCH TO DCP IF NOT READY.
	75			
0A6A	76	B	TIGERD	BRANCH TO RDY ERROR IF NOT ON.
	77			
	78			
	79	*****		
	80	*	RTN02	*
	81	*****		
	82	*		
	83	*	ROUTINE 02	TEST 3741 FOR NOT BUSY.
	84	*		
	85	*****		
0A6E	86	RTN02	DC	XL1'02'
0A6F	87	DC	DC	XL1'00'
0A70	88	DC	DC	AL2(RTN03)
	89			
0A72	90	B	PRINT	PRINT BUSY TEST HEADING.
0A73	91	DC	DC	XL1'45'
0A74	92	DC	DC	IL1'23'
0A75	93	DC	DC	AL2(TOBSY)
0A76	94	DC	DC	XL2'40A2'
	95			
0A7C	96	B	QUES	TEST FOR SSW 10.
0A7D	97	HPL	X'2C',X'3C'	HALT -FF- IF ON.
	98			
0A83	99	TIO	TIGERB,X'42'	BRANCH OUT ON ERROR IF BUSY.
	100			
0A87	101	B	LINK	RETURN TO DCP.
	102			
	103			
	104	*****		
	105	*	RTN03	*
	106	*****		
	107	*		
	108	*	ROUTINE 03	SENSE THE STATUS-LENGTH COUNT REGISTERS.
	109	*		
	110	*****		
0A8B	111	RTN03	DC	XL1'03'
0A8C	112	DC	DC	XL1'00'
0A8D	113	DC	DC	AL2(RTN04)
	114			
0A8F	115	TBN	SBYTE0,SSW00	TEST FOR LOOP ON SECTION SWITCH.
0A90	116	BT	LINK	SKIP THIS ROUTINE IF ON.
	117			
0A97	118	MVC	PRT-81(10),SMTPE	BUILD UP TEST HEADING FOR PRINTING.
0A98	119	MVC	PRT-48(33),STLCR	
0A99	120	MVI	PRT-47,X'4B'	
0AA0	121	B	PRINT	GO PRINT TEST HEADING.

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IBM MAINTENANCE DIAGNOSTIC PROGRAM

PART NO. 5558421 PAGE 2A

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
0AAE 46 0AAB 122 DC XL1'46'
0AAC 58 0AAC 123 DC IL1'91'
0AAD 1F49 0AAE 124 DC AL2(PRT)

CLEAR PRINT AREA.
ZERO FUNCTION REG.
BRANCH IF 3741 WENT BUSY.
ZERO DATA TRANS REG.
SENSE TO RESET 6USEC DELAY CIRCUIT.
BRANCH IF 3741 WENT BUSY.
PRESET DATA ADDRESS REG.
TEST FOR SSW 10.
HALT -FF- IF ON.
SENSE STATUS-LENGTH COUNT FOR -8000-
SENSED DATA AS EXPECTED?
RETURN TO DCP IF OK.
GO PRINT SENSE ERROR.
-EXPECTED.
-ACTUAL.
-ERROR ID.
POINT TO MAP CHART.
-PAGE 874, ENTRY 1.
ERROR HALT -03-.
RETURN TO DCP.
SENSE THE I/O TRANSFER LINES.
ROUTINE C4
ROUTINE NUMBER
NO MANUAL INTERVENTION REQUIRED.
ROUTINE 05 ADDRESS.
BUILD UP TEST HEADING FOR PRINTING.
GO PRINT TEST HEADING.
CLEAR PRINT AREA.
TEST FOR SSW 10.
HALT -FF- IF ON.
SENSE I/O TRANSFER LINES FOR 0000.
SENSED DATA AS EXPECTED ?
RETURN TO DCP IF OK.
GO PRINT SENSE ERROR.
-EXPECTED.
-ACTUAL.
-ERROR ID.

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
0B3F C0 27 17D9 190 B MAFS
0B43 8781 0B44 191 DC XL2'8781'
0B45 CC 87 0222 192
0B49 4004 0B4A 193 B HALT
0B4B C0 87 0216 194 DC XL2'4004'

POINT TO MAP CHART.
-PAGE 878, ENTRY 1.
ERROR HALT -04-.
RETURN TO DCP.
ROUTINE C5 SENSE THE DIAGNOSTIC BYTE.
ROUTINE NUMBER
NO MANUAL INTERVENTION REQUIRED.
ROUTINE 06 ADDRESS.
TEST FOR LOOP ON SECTION SWITCH.
SKIP THIS ROUTINE IF ON.
BUILD UP TEST HEADING FOR PRINTING.
GO PRINT TEST HEADING.
CLEAR PRINT AREA.
TEST FOR SSW 10.
HALT -FF- IF ON.
SENSE DIAGNOSTIC BYTE FOR 00.
SENSED DATA AS EXPECTED ?
RETURN TO DCP IF OK.
ROUTINE 05 ERROR MESSAGE \*
GO PRINT SENSE ERROR.
-EXPECTED.
-ACTUAL.
-ERROR ID.
POINT TO MAP CHART.
-PAGE 881, ENTRY 1.
ERROR HALT -05-.
RETURN TO DCP.
ROUTINE C6 CHECK EB CYCLES FOR PROPER
DATA TRANSMISSION.
ROUTINE NUMBER
NO MANUAL INTERVENTION REQUIRED
ROUTINE 07 ADDRESS
PRINT EB CYCLE TEST HEADING.

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4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	394		
OD4E CO 27 175D	395	B	QUES
OD4A FO 3C 3C	396	HPL	X'3C',X'3C'
	397		
OD4D 31 41 1919	398	LIC	PATRN,X'41'
OD51 30 41 1917	399	SNS	LSCK,X'41'
	400		
ODEE CC 27 142E	401	B	LICSNS
OD59 07	402	DC	XL1'07'
ODFA F1	403	DC	CL1'1'
OD5E CO 27 0216	404	B	LINK
	405		
ODEF CC 27 17D9	406	B	MAFS
ODE3 8E91	407	DC	XL2'8891'
ODEE CO 27 0222	408	B	HALT
ODE5 4007	409	DC	XL2'4007'
ODEE CO 27 0216	410	B	LINK
	411		
	412		
	413		*****
	414		* RTN08 *
	415		*****
	416		*
	417		ROUTINE C2 LIO & SNS FUNCTION REG WITH 55AA.
	418		*
	419		*****
OD6F 08	420	DC	XL1'08'
OD70 00	421	DC	XL1'00'
OD71 ODA7	422	DC	AL2(RTN09)
	423		
OD73 OC 01 1919 18E2	424	MVC	PATRN(2),M55AA
OD79 CO 27 1800	425	B	CODE
OD7D F1	426	DC	CL1'1'
	427		
OD7E CO 27 175D	428	B	QUES
OD82 FO 3C 3C	429	HPL	X'3C',X'3C'
	430		
ODEE 31 41 1919	431	LIC	PATRN,X'41'
OD89 30 41 1917	432	SNS	LSCK,X'41'
	433		
OD8D CO 27 142E	434	B	LICSNS
OD91 08	435	DC	XL1'08'
OD92 F1	436	DC	CL1'1'
OD93 CO 27 0216	437	B	LINK
	438		
ODE7 CO 27 17D9	439	B	MAFS
ODE8 8E91	440	DC	XL2'8891'
ODED CO 27 0222	441	B	HALT
ODA1 4008	442	DC	XL2'4008'
ODA3 CO 27 0216	443	B	LINK
	444		
	445		
	446		*****
	447		* RTN09 *
	448		*****
	449		*
	450		ROUTINE C9 LIO & SNS LENGTH COUNT REG WITH 55.
	451		*
	452		*****
ODA7 09	453	DC	XL1'09'
ODA8 00	454	DC	XL1'00'
ODA9 ODE3	455	DC	AL2(RTN0A)
	456		
ODAB CC 01 1919 18EE	457	MVC	PATRN(2),P0055
ODE1 CO 27 1800	458	B	CODE
ODBE F2	459	DC	CL1'2'
	460		
ODEE CO 27 175D	461	B	QUES

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	462		
ODEA FO 3C 3C	463	HPL	X'3C',X'3C'
	464		
ODBD 31 42 1919	465	LIC	PATRN,X'42'
ODC1 30 42 1917	466	SNS	LSCK,X'42'
	467		
ODC5 3C 00 191E	468	MVI	LSCK-1,X'00'
	469		
ODC9 CO 27 142E	470	B	LICSNS
ODCD 09	471	DC	XL1'09'
ODCE F2	472	DC	CL1'2'
ODCF CO 27 021E	473	B	LINK
	474		
ODD3 CO 27 17D9	475	B	MAFS
ODD7 8911	476	DC	XL2'8911'
ODD9 CO 27 0222	477	B	HALT
ODDD 4009	478	DC	XL2'4009'
ODDF CO 27 021E	479	B	LINK
	480		
	481		*****
	482		* RTNOA *
	483		*****
	484		*
	485		ROUTINE CA LIO & SNS LENGTH COUNT REG WITH AA.
	486		*
	487		*****
ODE3 0A	488	DC	XL1'0A'
ODE4 00	489	DC	XL1'00'
ODE5 0E42	490	DC	AL2(RTN0B)
	491		
ODE7 OC 01 1919 18EA	492	MVC	PATRN(2),P00AA
ODED CO 27 1800	493	B	CODE
ODF1 F2	494	DC	CL1'2'
	495		
ODF2 CO 27 175D	496	B	QUES
ODF6 FO 3C 3C	497	HPL	X'3C',X'3C'
	498		
ODF9 31 42 1919	499	LIC	PATRN,X'42'
ODFD 30 42 1917	500	SNS	LSCK,X'42'
	501		
ODE1 0D 00 18EE 1917	502	CLC	MFFFF(1),LSCK
ODE7 F2 81 1E	503	JE	EROA
	504		
ODEA 3C 00 191E	505	MVI	LSCK-1,X'00'
	506		
ODEE CC 27 142E	507	B	LICSNS
OE12 0A	508	DC	XL1'0A'
OE13 F2	509	DC	CL1'2'
OE14 CO 27 021E	510	B	LINK
	511		
OE18 CO 27 17D9	512	B	MAFS
OE1C 8911	513	DC	XL2'8911'
OE1E CO 27 0222	514	B	HALT
OE22 400A	515	DC	XL2'400A'
OE24 CO 27 021E	516	B	LINK
	517		
	518		* ROUTINE 0A ERRCR MESSAGE *
	519		
OE2E CO 27 021A	520	EROA	B
OE2C C2	521	DC	XL1'C2'
OE2D 2E	522	DC	IL1'42'
OE2E 1C0B	523	DC	AL2(LIORST)
OE30 400C	524	DC	XL2'400C'
OE32 CO 27 17D9	525	B	MAFS
OE36 8912	526	DC	XL2'8912'
OE38 CO 27 0222	527	B	HALT
OE3C 400C	528	DC	XL2'400C'
OE3E CO 27 021E	529	B	LINK



4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

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ERR LCC OBJECT CODE      ADDR STMT SOURCE STATEMENT
531 *****
532 * RTNOB *
533 *****
534 *
535 *      ROUTINE CC      LIO & SNS DATA ADDRESS REG WITH EVEN TEST
536 *      PATTERNS. -55AA- AND -AA55-.
537 *
538 *****
0E42 0E      0E42 539 RTNOB DC XL1'0B'      ROUTINE NUMBER
0E43 00      0E43 540 DC XL1'00'      NO MANUAL INTERVENTIGN REQUIRED
0E44 0E5E    0E45 541 DC AL2(RTNOB)    ROUTINE OC ADDRESS
542
0E4E 0C 03 1C7D 1C8F  543 MVC VNCD(4).EVEN    SET UP EVEN TEST HEADING.
0E4C 0C 87 021A      544 B PRINT             PRINT TEST HEADING.
0E50 4E      0E50 545 DC XL1'4E'
0E51 3E      0E51 546 DC IL1'5E'
0E52 1C8B    0E53 547 DC AL2(LSDAR)
0E54 40AB    0E55 548 DC XL2'40AB'
549
0E56 0C 87 175D      550 B QUES             TEST FOR SSM 10.
0E5A F0 3C 3C      551 HPL X'3C',X'3C'    HALT -FF- IF ON.
552
0EED 31 44 18E2      553 LIO H5EAA,X'44'    LOAD DATA ADDRESS REG WITH -55AA-.
0E61 30 44 1917      554 SNS L5CK,X'44'    SENSE DATA ADDRESS REGISTER.
0E6E 0D 01 18E2 1917  555 CLC H5EAA(2).L5CK DATA SENSED = DATA LOADED ?
0E6F F2 01 12      556 JNE DAFCK
557
0E6E 31 44 18E0      558 LIO HAA55,X'44'    LOAD DATA ADDRESS REG WITH -AA55-.
0E72 30 44 1917      559 SNS L5CK,X'44'    SENSE DATA ADDRESS REGISTER.
0E76 0D 01 18E0 1917  560 CLC HAA55(2).L5CK DATA SENSED = DATA LOADED ?
0E7C 0C 81 021E      561 BE LINK
562
0E80 0C 87 021A      563 DARCK B PRINT
0E84 CE      0E84 564 DC XL1'C6'          DAR NOT SENSED AS LOADED
0E85 50      0E85 565 DC AL1(MSG4-MSG4B)
0E86 1AA3    0E87 566 DC AL2(MSG4)
567
0E88 0C 87 17D9      568 B MAFS
0E8C 8913    0E8D 569 DC XL2'8913'      -PAGE 891. ENTRY 3.
570
0E8E 0C 87 0222      571 B HALT             HALT DUE TO DAR CHECK
0E92 4067    0E93 572 DC XL2'4067'
573
0E94 0C 87 021E      574 B LINK             RETURN TO DCP.
575
576
577 *****
578 * RTNOC *
579 *****
580 *
581 *      ROUTINE CC      LIO & SNS DATA ADDRESS REG WITH ODD TEST
582 *      PATTERNS. -1000- AND -0001-.
583 *
584 *****
0E98 0C      0E98 585 RTNOC DC XL1'0C'      ROUTINE NUMBER
0E99 00      0E99 586 DC XL1'00'      NO MANUAL INTERVENTION REQUIRED.
0E9A 0EC7    0E9B 587 DC AL2(RTNOC)    ROUTINE OD ADDRESS
588
0E9C 0C 03 1C7D 1C93  589 MVC VNCD(4).ODD    SET UP HEADING FOR ODD PATTERNS.
0EA2 0C 87 021A      590 B PRINT             PRINT TEST HEADING.
0EA6 4E      0EA6 591 DC XL1'4E'
0EA7 3E      0EA7 592 DC IL1'5E'
0EA8 1C8B    0EA9 593 DC AL2(LSDAR)
0EAA 40AC    0EAB 594 DC XL2'40AC'
595
0EAC 0C 87 175D      596 B QUES             TEST FOR SSM 10.
0EB0 F0 3C 3C      597 HPL X'3C',X'3C'    HALT -FF- IF ON.
598

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4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
0EB3 31 44 18E4      599 LIC H1C00,X'44'    LOAD DATA ADRS REG WITH -1000-.
0EB7 30 44 1917      600 SNS L5CK,X'44'    SENSE DATA ADRS REGISTER.
601
0EBB 31 44 18D0      602 LIC H000',X'44'    LOAD DATA ADRS REG WITH -0001-.
0EBF 30 44 1917      603 SNS L5CK,X'44'    SENSE DATA ADRS REGISTER.
604
0EC3 C0 87 C21E      605 B LINK             RETURN TO DCP.

```

LOAD DATA ADRS REG WITH -1000-  
SENSE DATA ADRS REGISTER.

LOAD DATA ADRS REG WITH -0001-  
SENSE DATA ADRS REGISTER.

RETURN TO DCP.

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LCC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		607	*****	
		608	* RTNOD *	
		609	*****	
		610	*	
		611	* RCUTINE CD	LID & SNS DATA TRANSFER REG WITH 55.
		612	*	
		613	*****	
0EC7 0D	0EC7	614	RTNOD DC	XL1'0D'
0EC8 00	0EC8	615	DC	XL1'00'
0EC9 0F03	0ECA	616	DC	AL2(RTN0E)
		617		
0ECB 0C 01 1919 18E6		618	MVC	PATRN(2),H0055
0ED1 C0 87 1800		619	B	CODE
0EDE FE	0ED5	620	DC	CL1'5'
		621		
0EDC C0 87 175D		622	B	QUES
0EDA F0 3C 3C		623	HPL	X'2C',X'3C'
		624		
0EDD 31 45 1919		625	LIO	PATRN,X'4E'
0EE1 30 45 1917		626	SNS	LSCK,X'45'
		627		
0EE5 3C 00 1916		628	MVI	LSCK-1,X'00'
		629		
0EE9 C0 87 1488		630	B	LICSNS
0EE0 10	0EED	631	DC	XL1'10'
0EEE FS	0EEE	632	DC	CL1'5'
0EEF C0 87 0216		633	B	LINK
		634		
0EF3 C0 87 17D9		635	B	MAFS
0EF7 8931	0EF8	636	DC	XL2'8931'
0EF9 C0 87 0222		637	B	HALT
0EFC 4010	0EFE	638	DC	XL2'4010'
0EFF C0 87 0216		639	B	LINK
		640		
		641		
		642	*****	
		643	* RTNOD *	
		644	*****	
		645	*	
		646	* RCUTINE CE	LIC & SNS DATA TRANSFER REG WITH AA.
		647	*	
		648	*****	
0F03 0F	0F03	649	RTNOD DC	XL1'0E'
0F04 00	0F04	650	DC	XL1'00'
0F05 0F3F	0F06	651	DC	AL2(RTN0F)
		652		
0F07 0C 01 1919 18EA		653	MVC	PATRN(2),H00AA
0F0D C0 87 1800		654	E	CODE
0F11 FE	0F11	655	DC	CL1'5'
		656		
0F12 C0 87 175D		657	B	QUES
0F16 F0 3C 3C		658	HPL	X'2C',X'3C'
		659		
0F19 31 45 1919		660	LIC	PATRN,X'45'
0F1D 30 45 1917		661	SNS	LSCK,X'45'
		662		
0F21 3C 00 1916		663	MVI	LSCK-1,X'00'
		664		
0F25 C0 87 1488		665	B	LICSNS
0F29 11	0F29	666	DC	XL1'11'
0F2A FE	0F2A	667	DC	CL1'5'
0F2B C0 87 0216		668	B	LINK
		669		
0F2F C0 87 17D9		670	B	MAFS
0F23 8931	0F34	671	DC	XL2'8931'
0F3E C0 87 0222		672	B	HALT
0F39 4010	0F3A	673	DC	XL2'4011'
0F3B C0 87 0216		674	B	LINK

ERR LCC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		676	*****	
		677	* RTNOD *	
		678	*****	
		679	*	
		680	* RCUTINE CF	ISSUE A SIO ENABLE INTERRUPT.
		681	*	
		682	*****	
0F3F 0F	0F3F	683	RTNOD DC	XL1'0F'
0F40 00	0F40	684	DC	XL1'00'
0F41 0FC1	0F42	685	DC	AL2(RTN10)
		686		
0F43 C0 87 1576		687	B	SICHD
0F47 AF	0F47	688	DC	XL1'AF'
0F48 E2CE340C5D5C1C2	0F64	689	DC	CL29'SET ENABLE INTERRUPT LATCH.'
0F50 D3CE40C9DEE3C5D9		689		
0F5E D9E4D7E340D3C1E3		689		
0F60 C3C2A8A040		689		
0F65 C1 42 17BF		690	TIO	DRCPD,X'42'
0F69 35 84 18FA		691	L	INTOS.IARE
0F6D 3B C1 18C1		692	SBF	FLAG,X'01'
0F71 C0 87 175D		693	B	QUES
0F7E F0 3C 3C		694	HPL	X'2C',X'3C'
		695		
0F78 31 41 18DE		696	LIC	H0C80,X'41'
0F7C F3 40 02		697	SIO	X'02',X'40'
0F7F 30 45 18FC		698	SNS	DTE,X'4E'
0F83 38 01 18C1		699	TBN	FLAG,X'01'
0F87 F2 10 1D		700	JT	EACINT
0F8A 3C 10 191C		701	MVI	XPCT,X'10'
0F8E C0 87 15E0		702	B	CKSID
0F92 12	0F92	703	DC	XL1'12'
0F93 C0 87 0216		704	B	LINK
		705		
0F97 C0 87 17D9		706	B	MAFS
0F9B 8951	0F9C	707	DC	XL2'8951'
0F9D C0 87 0222		708	B	HALT
0FA1 4012	0FA2	709	DC	XL2'4012'
0FA3 C0 87 0216		710	B	LINK
		711		
0FA7 C0 87 021A		712	BADINT B	PRINT
0FAB C2	0FAB	713	DC	XL1'C2'
0FAC 1E	0FAC	714	DC	IL1'21'
0FAD 1EEE	0FAE	715	DC	AL2(SIOC4)
0FAF 401A	0F80	716	DC	XL2'401A'
0FB1 C0 87 17D9		717	B	MAFS
0FB5 8952	0FB6	718	DC	XL2'8952'
0FB7 C0 87 0222		719	B	HALT
0FB8 401A	0FBC	720	DC	XL2'401A'
0FBD C0 87 0216		721	B	LINK
		722	*****	
		723	* RTN10 *	
		724	*****	
		725	*	
		726	* ROUTINE 10	ISSUE A RESET INTERRUPT.
		727	*	
		728	*****	
0FC1 10	0FC1	729	RTN10 DC	XL1'10'
0FC2 00	0FC2	730	DC	XL1'00'
0FC3 1022	0FC4	731	DC	AL2(RTN11)
		732		
0FC5 C0 87 1576		733	B	SICHD
0FC9 80	0FC9	734	DC	XL1'80'
0FCA D9C5E2C5E340C5D5	0FE6	735	DC	CL29'RESET ENABLE INTERRUPT LATCH.'
0FD2 C1C2D3C540C9D5E3		735		
0FCA C5D9D9E4D7E340D3		735		
0FE2 C1E3C3C84E		735		
0FE7 C1 42 17BF		736	TIO	DRCPD,X'42'
		737		MAKE SURE 3741 IS NOT BUSY.

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
OFEB C0 87 175D		738	B	QUES TEST FOR SSW 10.
OFEF F0 3C 3C		739	HPL	X'3C',X'3C' HALT -FF- IF ON.
		740		
OFF2 31 41 18DE		741	LIO	H0C80,X'41' SET TO DIAGNOSTIC MODE.
OFF6 F2 40 02		742	SIO	X'02',X'40' ISSUE ENABLE INTERRUPT.
OFF9 F3 40 04		743	SIO	X'4',X'40' ISSUE INTERRUPT RESET.
OFFC 30 45 18FC		744	SNS	DTR,X'45' SENSE DIAG BYTE FOR -00--.
		745		
1000 38 10 18FE		746	TBN	DTR-1,X'10' DID ENABLE BIT GET RESET ?
10C4 C0 90 021E		747	BF	LINK RETURN TO DCP IF YES.
		748		
		749	*	ROUTINE 10 ERROR MESSAGE *
		750		
10C8 C0 87 021A		751	B	PRINT PRINT RESET CHECK.
10C0 C2	100C	752	DC	XL1'C2'
10C0 1D	100D	753	DC	IL1'29'
100E 1D4E	100F	754	DC	AL2(INTR)
1010 4013	1011	755	DC	XL2'4013'
1012 C0 87 17D9		756	E	MAPS POINT TO MAP CHART.
101E 8971	1017	757	DC	XL2'8971' -PAGE 897. ENTRY 1.
		758		
101P C0 87 C222		759	B	HALT ERROR HALT -13--.
101C 4013	101D	760	DC	XL2'4013'
101E C0 87 021E		761	B	LINK RETURN TO DCP.
		762		
		763		
		764	*	*****
		765	*	RTN11 *
		766	*	*****
		767	*	*****
		768	*	ROUTINE 11 ISSUE A READ COMMAND.
		769	*	*****
		770	*	*****
1022 11	1022	771	RTN11 DC	XL1'11' ROUTINE NUMBER
1023 00	1023	772	DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
1024 108A	1025	773	DC	AL2(RTN12) ROUTINE 12 ADDRESS
		774		
1026 C0 87 157E		775	B	SICHD PRINT TEST HEADING.
102A B1	102A	776	DC	XL1'B1' MESSAGE ID.
102E E2C5E340D5C5C1C4	1047	777	DC	CL29'SET READ CALL LATCH.*
1033 40C3C1D3D340D3C1		777		
102E E3C3CE4B40404040		777		
1043 404040404040		777		
104E C1 42 17BF		778	TIO	DRCPD,X'42' MAKE SURE 3741 IS NOT BUSY.
		779		
104C C0 87 175D		780	B	QUES TEST FOR SSW 10.
1050 F0 3C 3C		781	HPL	X'3C',X'3C' HALT -FF- IF ON.
		782		
1053 31 41 18DE		783	LIC	H0C80,X'41' SET TO DIAGNOSTIC MODE.
1057 F2 41 00		784	SIO	X'00',X'41' ISSU A READ CALL.
105A C1 42 17BF		785	TIC	TICERB,X'42' BRANCH IF 3741 BUSY.
105E 30 45 18FC		786	SNS	DTR,X'45' SENSE DIAG BYTE FOR -03--.
		787		
10E2 3C 03 191C		788	MVI	XPCT,X'02' STORE EXPECTED RESULT.
10E6 C0 87 15B0		789	B	CKSID GO CHECK EXPECTED WITH RESULT.
106A 14	106A	790	DC	XL1'14' ERROR ID.
106B C0 87 107F		791	E	DORST GO CHECK FOR RESET IF OK.
		792		
106F C0 87 17D9		793	B	MAPS POINT TO MAP CHART.
1073 8991	1074	794	DC	XL2'8991' -PAGE 899. ENTRY 1.
1075 C0 87 0222		795	B	HALT ERROR HALT -14--.
1079 4014	107A	796	DC	XL2'4014'
107E C0 87 021E		797	B	LINK RETURN TO DCP.
		798		
107F F3 40 08		799	DORST SIO	X'08',X'40' DO A READ CALL RESET.
10E2 30 45 18FE		800	SNS	TEMP,X'45' SENSE DIAG BYTE FOR -00--.
10E6 C0 87 10EA		801	B	CKRST GO CHECK DIAG BYTE FOR RESET.
		802		

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		803		
		804	*	*****
		805	*	RTN12 *
		806	*	*****
		807	*	*****
		808	*	ROUTINE 12 ISSUE A WRITE COMMAND.
		809	*	*****
		810	*	*****
108A 12	108A	811	RTN12 DC	XL1'12' ROUTINE NUMBER
108E 00	108E	812	DC	XL1'00' NO MANUAL INTERVENTION
108C 1118	108D	813	DC	AL2(RTN12) ROUTINE 13 ADDRESS
		814		
108E C0 87 157E		815	B	SICHD PRINT TEST HEADING.
1092 B2	1092	816	DC	XL1'B2' MESSAGE ID.
1092 E2C5E340E4D9C5E3	10AF	817	DC	CL29'SET WRITE CALL LATCH.*
109E C540C3C1D3D340C3		817		
10A3 C1E3C3CE4E4C4040		817		
10AB 4040404040		817		
1080 C1 42 17BF		818	TIO	DRCPD,X'42' MAKE SURE 3741 IS NOT BUSY.
		819		
1084 C0 87 175D		820	B	QUES TEST FOR SSW 10.
108B F0 3C 3C		821	HPL	X'3C',X'3C' HALT -FF- IF ON.
		822		
108B 31 41 18DE		823	LIO	H0C80,X'41' SET TO DIAGNOSTIC MODE.
108F F3 42 00		824	SIO	X'00',X'42' ISSUE A WRITE CALL.
10C2 30 45 18FC		825	SNS	DTR,X'45' SENSE DIAG BYTE FOR -05--.
		826		
10C6 3C 05 191C		827	MVI	XPCT,X'05' STORE EXPECTED RESULT.
10CA C0 87 15B0		828	B	CKSID GO CHECK EXPECTED WITH RESULT.
10CE 15	10CE	829	DC	XL1'15' ERROR ID.
10CF C0 87 10E3		830	E	CKRSTT GO DO RESET IF OK.
		831		
10C3 C0 87 17D9		832	B	MAPS POINT TO MAP CHART.
10D7 9031	10D8	833	DC	XL2'9031' -PAGE 903. ENTRY 1.
10C9 C0 87 0222		834	B	HALT ERROR HALT -15--.
10DD 4015	10DE	835	DC	XL2'4015'
10DF C0 87 021E		836	B	LINK RETURN TO DCP.
		837		
10E3 F3 40 08		838	CKRSTT SIO	X'08',X'40' DO WRITE CALL RESET.
10E6 30 45 18FE		839	SNS	TEMP,X'45' SENSE DIAG BYTE FOR -00--.
		840		
10EA 3D 00 18FC		841	CKRST CLI	TEMP-1,X'00' DIAG BYTE RESET TO -00- ?
10EE F2 01 0D		842	JNE	ERST JUMP IF NOT.
10F1 3D 15 0A03		843	CLI	RTN8,X'15' CHECKING RESET FROM RTN15?
10F5 C0 01 021E		844	BNE	LINK RETURN TO DCP IF NOT.
		845		
10F9 C0 87 022A		846	B	LOAD BRANCH TO DCP TO TERMINATE SECTION.
10FD 00	10FD	847	DC	XL1'00'
		848		
		849	*	3741 RESET ERROR MESSAGE *
		850		
10FE C0 87 021A		851	ERST B	PRINT PRINT 3741 NOT RESETTING MESSAGE.
1102 C2	1102	852	DC	XL1'C2'
1103 1B	1103	853	DC	IL1'27'
1104 102B	1105	854	DC	AL2(NTRST)
110E 401E	1107	855	DC	XL2'401E'
1108 C0 87 17D9		856	B	MAPS POINT TO MAP CHART.
110C 8992	110D	857	DC	XL2'8992' -PAGE 899. ENTRY 2.
110E C0 87 0222		858	B	HALT ERROR HALT -16--.
1112 401E	1113	859	DC	XL2'401E'
1114 C0 87 021E		860	B	LINK RETURN TO DCP.

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
862	*****			
863	* RTN13 *			
864	*****			
865	*			
866	*	ROUTINE 13		ISSUE A CONTROL 1 SIO.
867	*			
868	*****			
1118	869	RTN13	DC	XL1'13' ROUTINE NUMBER
1119	870		DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
111A	871		DC	AL2(RTN14) ROUTINE 14 ADDRESS
	872			
111C	873		B	SIOHD PRINT TEST HEADING.
1120	874		DC	XL1'83' MESSAGE ID.
1121	875		DC	CL29'DD CONTROL 1 START I/O.'
1129	875			
1131	875			
1139	875			
113E	876		TIO	DROPD,X'42' MAKE SURE 3741 IS NOT BUSY.
	877			
1142	878		B	QUES TEST FOR SSW 10.
114E	879		HPL	X'3C',X'3C' HALT --FF-- IF ON.
	880			
1149	881		LIO	H0C80,X'41' SET TO DIAGNOSTIC MODE.
114D	882		SIO	X'FF',X'43' ISSUE CONTROL 1 SIO.
	883			
1150	884		B	LINK RETURN TO DCP.
	885			
	886			
	887	*****		
	888	* RTN14 *		
	889	*****		
	890	*		
	891	*	ROUTINE 14	ISSUE CONTROL 2 SIO.
	892	*		
	893	*****		
1154	894	RTN14	DC	XL1'14' ROUTINE NUMBER
115E	895		DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
1156	896		DC	AL2(RTN15) ROUTINE 15 ADDRESS
	897			
1158	898		B	SIOHD PRINT TEST HEADING.
115C	899		DC	XL1'B4' MESSAGE ID.
115D	900		DC	CL29'DD CONTROL 2 START I/O.'
116E	900			
116C	900			
1175	900			
117A	901		B	QUES TEST FOR SSW 10.
117E	902		HPL	X'3C',X'3C' HALT --FF-- IF ON.
	903			
1181	904		LIC	H0C00,X'41' REMOVE FROM DIAGNOSTIC MODE.
118E	905		TIO	DROPD,X'42' MAKE SURE 3741 IS NOT BUSY.
1189	906		SIC	X'FF',X'44' ISSUE CONTROL 2 SIO.
	907			
118C	908		B	LINK RETURN TO DCP.
	909			
	910			
	911	*****		
	912	* RTN15 *		
	913	*****		
	914	*		
	915	*	ROUTINE 15	ISSUE A SIO TO SET/RESET THE NO-OP LATCH.
	916	*		
	917	*****		
1190	918	RTN15	DC	XL1'15' ROUTINE NUMBER
1191	919		DC	XL1'00' NO INTERVENTION REQUIRED
1192	920		DC	AL2(RTN16) ROUTINE 16 ADDRESS
	921			
1194	922		B	SIOHD PRINT TEST HEADING.
1198	923		DC	XL1'B5' MESSAGE ID.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
1199	E2C5E340C1D5C440	1185	924	DC CL29'SET AND RESET NO-OP LATCH.'
11A1	D9C5E2C5E340DED6		924	
11A9	60D6D740C3C1E3C3		924	
11B1	CE4B404040		924	
11E6	C1 42 17BF		925	TIO DROPD,X'42' MAKE SURE 3741 IS NOT BUSY.
			926	
11BA	C0 E7 175D		927	B QUES TEST FOR SSW 10.
11BE	F0 3C 3C		928	HPL X'3C',X'3C' HALT --FF-- IF ON.
			929	
11C1	31 41 18CE		930	LIC H0000,X'41' REMOVE FROM DIAG. MODE.
11C5	F3 41 00		931	SIC X'00',X'41' ISSUE A READ CALL.
11C8	30 42 0AE5		932	SNS LCR,X'42' SENSE STATUS FOR -84-.
11CC	3E 04 0AFA		933	TBN LCR-1,X'04' NO-OP BIT ON IN FIRST STATUS ?
11D0	FE 90 35		934	JF E13 BRANCH IF NO-OP NOT ON.
			935	
11D3	30 42 190D		936	SNS WORK,X'42' SENSE STATUS FOR -80-.
11D7	3E 04 190C		937	TBN WORK-1,X'04' NO-OP BIT RESET ?
11DB	F2 10 0F		938	JT E13A BRANCH IF NO-OP NOT RESET.
11DE	C1 42 17BF		939	TIO TICERB,X'42' BRANCH OUT IF 3741 BUSY.
			940	
11E2	F3 40 C8		941	SIO X'C8',X'40' DO READ CALL RESET.
11E5	30 45 18FE		942	SNS TEMP,X'45' SENSE DIAG BYTE FOR -00--
11E9	C0 E7 10EA		943	E CKRST GO CHECK RESET RESULTS.
			944	
			945	* ROUTINE 1E ERROR MESSAGES *
			946	
11ED	C0 E7 021A		947	E13A B PRINT PRINT NO RESET ERROR.
11F1	C2	11F1	948	DC XL1'C2'
11F2	1E	11F2	949	DC IL1'27'
11F3	1D7C	11F4	950	DC AL2(NORES)
11FE	4018	11F6	951	DC XL2'4018'
11F7	C0 E7 17D9		952	B MAPS POINT TO MAP CHART.
11FE	9052	11FC	953	DC XL2'9052' -PAGE 905, ENTRY 2.
11FD	C0 E7 0222		954	B HALT ERROR HALT -18-.
1201	4018	1202	955	DC XL2'4018'
1203	C0 E7 022A		956	B LOAD GO TERMINATE SECTION.
1207	00	1207	957	DC XL1'00'
			958	
120E	C0 E7 021A		959	E13 B PRINT PRINT LATCH SET CHECK.
120C	C2	120C	960	DC XL1'C2'
120D	19	120D	961	CC IL1'25'
120E	1C61	120F	962	DC AL2(NCSEE)
1210	4017	1211	963	DC XL2'4017'
1212	C0 E7 17D9		964	B MAPS POINT TO MAP CHART.
1216	9051	1217	965	DC XL2'9051' -PAGE 905, ENTRY 1.
1218	C0 E7 0222		966	B HALT ERROR HALT -17-.
121C	4017	121D	967	DC XL2'4017'
121E	C0 E7 022A		968	B LOAD GO TERMINATE SECTION.
1222	00	1222	969	DC XL1'00'
			970	
			971	
			972	*****
			973	* RTN16 *
			974	*****
			975	*
			976	* ROUTINE 16 TEST ALL INVALID N CODE COMMANDS.
			977	(DIAL IN ONLY)
			978	*****
1223	16	1223	979	RTN16 DC XL1'16' ROUTINE NUMBER
1224	80	1224	980	DC XL1'80' MANUAL INTERVENTION REQUIRED
122E	FFFF	1226	981	DC XL2'FFFF' LAST ROUTINE
			982	
1227	0C 03 190D 0003		983	MVC WORK(4),3 SAVE BOTTOM CORE OF DCP.
122D	0C 03 0033 18FE		984	MVC 3(4),BRNCH STORE SPECIAL 'BRANCH BACK' CMND.
			985	
1233	C0 E7 021A		986	B PRINT PRINT TEST HEADING.
1237	42	1237	987	DC XL1'42'
1238	33	1238	988	DC IL1'51'



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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
1107 *****
1108 * SNSERR *
1109 *****
1110 *                               SUBROUTINE PRINTS SENSE ERROR HEADING
1111 *                               AND DUMPS STATUS/ERRORS OF THE REGISTERS.
1112 *                               CALL SUBROUTINE BY -
1113 *
1114 *                               B   SNSERR
1115 *                               DC  2,X'EXPECTED PATTERN'
1116 *                               DC  2,X'ACTUAL PATTERN'
1117 *                               DC  1,X'ERROR ID'
1118 *****
1119 SNSERR A   N001,ARR
1120          ST   *+5,ARR
1121          MVC  XPT(2),*+3      STORE EXPECTED PATTERN.
1122          A   N002,ARR
1123          ST   *+5,ARR
1124          MVC  ACT(2),*+3      STORE ACTUAL PATTERN.
1125          A   N001,ARR
1126          ST   *+5,ARR
1127          MVC  SNRID(1),*+3   STORE ERROR ID.
1128          A   N001,ARR
1129          ST   ERSN+3,ARR     STORE RETURN ADDRESS.
1130
1131          B   PRINT            PRINT ERROR HEADING.
1132          DC  XL1'C2'          ID -4003- OR -4004- OR -4005-.
1133          DC  IL1'12'
1134          DC  AL2(SNCKMS)
1135          DC  XL2'4000'
1136
1137          CLI  RTN#,X'03'      FROM RTN03 ERROR ?
1138          JNE  *+15           JUMP IF NOT.
1139          MVC  PRT-69(11),STLCR-22  LOAD RTN03 ERROR HEADING.
1140          MVC  PRT-46(16),STLCR-5
1141          CLI  RTN#,X'04'      FROM RTN04 ERROR ?
1142          JNE  *+5           JUMP IF NOT.
1143          MVC  PRT-55(18),IOTRL    LOAD RTN04 ERROR HEADING.
1144          CLI  RTN#,X'05'      FROM RTN05 ERROR ?
1145          JNE  *+5           JUMP IF NOT.
1146          MVC  PRT-67(15),DIAG    LOAD RTN05 ERROR HEADING.
1147          B   EPFNT2          PRINT HEADING.
1148
1149          LA   PRT-67,XR2       INITIALIZE OUTPUT ADDRESSES.
1150          CLI  RTN#,X'05'      FROM ROUTINE 05 ?
1151          JNE  NCFM           JUMP IF NOT SO.
1152          LA   WORK,XR1        SET UP DUMMY EB1 FIELD.
1153          J   *+7
1154          LA   PRT-47,XR1      SET UP NORMAL EB1 FIELD.
1155
1156          MVC  PRT-70(10),EB2    ARRANGE TABLE HEADINGS.
1157          CLI  RTN#,X'05'      FROM ROUTINE 05 ?
1158          JE   *+5           SKIP IF SO.
1159          MVC  PRT-50(10),EB1    PRINT EB BYTE LABELS.
1160          B   EPFNT1
1161
1162          MVC  PRT-67(15),BITS    ARRANGE BIT LABELS.
1163          CLI  RTN#,X'CE'      FROM ROUTINE 05 ?
1164          JE   *+5           SKIP IF SO.
1165          MVC  PRT-47(15),BITS    PRINT BIT LABELS.
1166          B   EPFNT2
1167
1168          B   BITSNF          CALCULATE STATUS OF ALL ACTUAL BITS.
1169          DC  AL2(ACT)
1170          B   EPFNT1
1171          B   CMFARE
1172          MVC  PRT-84(7),ERORS    GO PRINT ACTUAL STATUS.
1173          B   EPFNT2          FIGURE ERROR BITS.
1174          B   *+*           MOVE IN ERROR LABEL.
                               PRINT ERROR BITS.
                               RETURN TO ROUTINE.

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
1176 *****
1177 * LIOSNS *
1178 *****
1179 *                               THE EXPECTED AND ACTUAL SNS PATTERNS
1180 *                               ARE COMPARED FROM ROUTINES 07-0E.
1181 *****
1182 LIOSNS A   N001,ARR
1183          ST   *+9,ARR
1184          MVC  NIC(2),*+3      SAVE THE N CODE. ERROR ID.
1185          A   N001,ARR
1186          ST   CKKLS+3,ARR     SAVE RETURN ADDRESS.
1187
1188          CLC  LSCK(2),PATRN    EXPECTED AND ACTUAL EQUAL ?
1189          JNE  *+7           JUMP IF NOT.
1190          CKKLS B   *+3      RETURN TO ROUTINE.
1191
1192          MVC  LSID(1),*ID-1    STORE CURRENT ERROR ID.
1193          B   PRINT            PRINT ERROR HEADING.
1194          DC  XL1'C2'
1195          DC  IL1'22'
1196          DC  AL2(LSCK)
1197          DC  XL2'4000'
1198          CLI  NIC,X'F1'      N CODE 1 CHECK ?
1199          JNE  *+9           JUMP IF NOT.
1200          MVC  PRT-55(17),FNCT    MOVE IN N 1 ID.
1201          CLI  NIC,X'F2'      N CODE 2 CHECK ?
1202          JNE  *+9           JUMP IF NOT.
1203          MVC  PRT-66(16),STLCR-5  MOVE IN N 2 ID.
1204          CLI  NIC,X'F4'      N CODE 4 ID ?
1205          JNE  *+5           JUMP IF NOT.
1206          MVC  PRT-54(21),DADR    MOVE IN N 4 ID.
1207          CLI  NIC,X'F5'      N CODE 5 CHECK ?
1208          JNE  *+5           JUMP IF NOT.
1209          MVC  PRT-66(17),DIGTR-5  MOVE IN N 5 ID.
1210          B   EPFNT2          PRINT HEADING.
1211          CLI  NIC,X'F2'      N CODE 2 CHECK ?
1212          JE   SPL2          JUMP IF SO.
1213          CLI  NIC,X'F5'      N CODE 5 CHECK ?
1214          JE   SPL2          JUMP IF SO.
1215          MVC  PRT-70(10),EB2    SET UP BYTE LABELS.
1216          MVC  PRT-50(10),EB1
1217          B   EPFNT1          PRINT BYTE LABELS.
1218          MVC  PRT-67(15),BITS    SET UP BIT LABELS.
1219          MVC  PRT-47(15),BITS
1220          B   EPFNT2          PRINT BIT LABELS.
1221          LA   PRT-67,XR2      LOAD OUTPUT ADDRESS.
1222          LA   PRT-47,XR1
1223          J   CALC
1224          MVC  PRT-70(10),EB1    PRINT EB1 HEADING.
1225          B   EPFNT1
1226          MVC  PRT-67(15),BITS    PRINT BIT HEADINGS.
1227          B   EPFNT2          STORE OUTPUT ADDRESSES.
1228          LA   PRT-67,XR1
1229          LA   WCRK,XR2
1230          B   BITSNF          CALCULATE BIT STATUS OF BYTES.
1231          DC  AL2(LSCK)
1232          B   EPFNT1          PRINT BIT STATUS.
1233          MVC  XPT(2),PATRN    STORE EXPECTED PATTERN.
1234          MVC  ACT(2),LSCK     STORE ACTUAL PATTERN.
1235          B   CMFARE          CALCULATE ERROR BITS.
1236          MVC  PRT-84(7),ERORS    MOVE ERROR LABEL IN.
1237          B   EPFNT2          PRINT ERROR BITS.
1238
1239          ADDIT ALC  CKKLS+3(2),N004  INCR RETURN ADDRESS TO BRANCH
1240          B   CKKLS          TO ERROR HALT IN ROUTINE.

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
1242 *****
1243 * SIOHD *
1244 *****          TEST HEADINGS AND ERROR MESSAGES
1245 *                ARE PRINTED FOR ROUTINES 0D - 13.
1246 *
1247 *****
1576 34 08 157F          1248 SIOHD ST  **S.ARR
157A 0C 00 15A5 0000    1249 MVC  SIC(1),*-#      STORE MESSAGE HEADING ID.
1580 36 08 18DC          1250 A      NO29.ARR
15E4 34 08 158D          1251 ST  **S.ARR
15E8 0C 1C 1F1B C000    1252 MVC  PRT-46(25),*-#   STORE ROUTINE HEADING.
15E8 36 08 18D0          1253 A      NOC1.ARR
1592 34 08 15AF          1254 ST  SHDD+3,ARR       STORE RETURN ADDRESS.
1255
1596 0C 0F 1EFE 1C21    1256 MVC  PRT-75(16),TSID  BUILD UP REST OF HEADING.
159C C0 87 021A          1257 B      PRINT          PRINT ROUTINE TEST HEADING.
15A0 4E                15A0 1258 DC  XL1*45*
15A1 5E                15A1 1259 DC  IL1*91*
15A2 1F45              15A3 1260 DC  AL2(PRT)
15A4 4000              15A5 1261 SID DC  XL2*4000*
15A6 0C 5A 1F49 1F4A   1262 MVC  PRT(91),PRT+1   CLEAR PRINT AREA.
15AC C0 87 C000        1263 SHDD B  *-#      RETURN TO ROUTINE.
1264
1265 * ROUTINE 0D-13 ERROR MESSAGE *
1266
15E0 34 08 15B9          1267 CKSID ST  **S.ARR
15E4 0C 00 15D4 0000    1268 MVC  SERID(1),*-#   STORE ERROR ID.
15E4 36 08 18D0          1269 A      NOC1.ARR
15E8 34 08 163A          1270 ST  CKS+3,ARR       STORE RETURN ADDRESS.
1271
15C2 0D 00 191C 18FE    1272 CLC  XPCT(1),DTR-1  EXPECTED AND ACTUAL EQUAL ?
15C8 F2 81 6C           1273 JE  CKS              JUMP IF SD.
1274
15CB C0 87 021A          1275 B      PRINT          PRINT ERROR HEADING.
15CF C2                15CF 1276 DC  XL1*C2*
15D0 1E                15D0 1277 DC  IL1*22*
15D1 1C21              15D2 1278 DC  AL2(SIOHD)
15D3 4003              15D4 1279 SERID DC  XL2*4005*
1280
15D5 0C 5A 1F49 1F4A   1281 MVC  PRT(91),PRT+1   MOVE IN DIAG BYTE LABEL.
15D5 0C 0E 1F06 18CA   1282 MVC  PRT-67(15),DIAG PRINT LABEL.
15E1 C0 87 18A7          1283 B      EPFNT2
15E5 0C 09 1F03 1D05    1284 MVC  PRT-70(10),EB2  BRING IN EB2 LABEL.
15E8 C0 87 189C          1285 B      EPFNT1          PRINT LABEL.
15EF 0C 0E 1F06 1CFE    1286 MVC  PRT-67(15),BITS MOVE IN BIT HEADINGS.
15F5 C0 87 18A7          1287 B      EPFNT2          PRINT HEADINGS.
1288
15F9 C2 02 1F06          1289 LA  PRT-67,XF2       LOAD OUTPUT ADDRESSES.
15FC C2 01 1F1A          1290 LA  PRT-47,XF1
1601 C0 87 16E1          1291 E      BITSNF          CALCULATE STATUS OF ALL BITS.
16CE 18FC              1606 1292 DC  AL2(DTR)
1607 0C 0E 1F1A 1F1E   1293 MVC  PRT-47(15),PRT-46 CLEAR EB1 STATUS.
160D C0 87 189C          1294 B      EPFNT1          PRINT BIT STATUS OF DIAG BYTE.
1295
1611 0C 00 163E 191C    1296 MVC  XPT-1(1),XPCT   STORE EXPECTED PATTERN.
1617 0C 01 163E 18FC    1297 MVC  ACT(2),DTR     STORE ACTUAL PATTERN.
161C C0 87 163F          1298 B      CMFARE          CALCULATE ERROR BITS.
1621 0C 06 1EF5 1D10    1299 MVC  PRT-84(7),ERORS MOVE IN ERROR LABEL.
1627 C0 0E 1F1A 1F1E   1300 MVC  PRT-47(15),PRT-46
162D C0 87 18A7          1301 B      EPFNT2          PRINT ERROR BITS.
1302
1631 0E 01 163A 18D6    1303 ALC  CKS+3(2),N004  INCR RETURN ADDRESS TO RETURN
1637 C0 87 0000          1304 CKS  B  *-#      TO ERROR HALT.

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ERR LOC OBJECT CCDE      ADDR STMT SOURCE STATEMENT
1306 *****
1307 * CMPARE *
1308 *****          EXPECTED EB1 & EB2 BYTES IN 'XPT' ARE
1309 *                COMPARED AGAINST ACTUAL EB1 & EB2 BYTES
1310 *                IN 'ACT'. ERROR BITS ARE IDENTIFIED BY
1311 *                A -- IN THE OUTPUT AREA.
1312 *
1313 *****
163C 1314 XPT  DC  XL2*0000*   EXPECTED EB1 & EB2 BYTES.
163E 1215 ACT  DC  XL2*00C0*   ACTUAL EB1 & EB2 BYTES.
1316
163F 34 08 169A          1317 CMPARE ST  CMFR+3,ARR   STORE RETURN ADDRESS.
1643 34 02 16D2          1318 ST  TAERR+3,XR2      INITIALIZE OUTPUT ADDRESSES.
1647 34 01 167A          1319 ST  TBERR+3,XF1
1648 3C 01 1664          1320 MVI  TA3+1,X*01*     INITIALIZE BIT POINTERS.
164F 3C 01 166E          1321 MVI  TA2+1,X*01*
1653 3C 01 1675          1322 MVI  TA1+1,X*01*
1657 3C 01 167C          1323 MVI  TB3+1,X*01*
165B 3C 01 1683          1324 MVI  TB2+1,X*01*
165F 3C 01 168D          1325 MVI  TB1+1,X*01*
1326
1663 38 01 163B          1327 TA3  TBN  XPT-1,X*01*   EXPECTED BIT ON IN EB2 BYTE ?
1667 F2 10 0A          1328 JT  TA1              JUMP IF YES.
166A 38 01 163C          1329 TA2  TEN  ACT-1,X*01*   ACTUAL BIT ON IN EB2 BYTE ?
166E F2 10 5E          1330 JT  TAERR           GO PUT AN -- IN OUTPUT IF ON.
1671 F2 87 07          1331 J  TB3              CHECK EB1 BYTE.
1332
1674 38 01 163D          1333 TA1  TBN  ACT-1,X*01*   ACTUAL BIT ON IN EB2 BYTE ?
1678 F2 90 5A          1334 JF  TAERR           GO PUT AN -- IN OUTPUT IF OFF.
1335
167B 38 01 163C          1335 TB3  TBN  XPT,X*01*     EXPECTED BIT ON IN EB1 BYTE ?
167F F2 10 0A          1337 JT  TB1              JUMP IF SO.
1682 78 01 163E          1338 TB2  TEN  ACT,X*01*     ACTUAL BIT ON IN EB1 BYTE ?
1686 F2 10 4E          1339 JT  TBERR           GO PUT AN -- IN OUTPUT IF SO.
1689 F2 87 C7          1340 J  TC              CONTINUE ANALYSIS.
1341
168C 38 01 163E          1342 TB1  TBN  ACT,X*01*     ACTUAL BIT ON IN EB1 BYTE ?
1690 F2 C0 44          1343 JF  TBERR           GO PUT AN -- IN OUTPUT IF OFF.
1344
1693 38 80 168D          1345 TC  TBN  TB1+1,X*20*   BIT 0 BEEN TESTED ?
1697 C0 10 C000          1346 CMPR  BT  *-#      RETURN IF SO.
1698 0E 00 167E 1675    1347 ALC  TA1+1(1),TA1+1  INCREMENT BIT POINTERS.
16A1 0E 00 166E 166E    1348 ALC  TA2+1(1),TA2+1
16A7 0E 00 1664 1664    1349 ALC  TA3+1(1),TA3+1
16AC 0E 00 168D 168D    1350 ALC  TB1+1(1),TB1+1
16B3 0E 00 1683 1683    1351 ALC  TB2+1(1),TB2+1
16B9 0E 00 167C 167C    1352 ALC  TB3+1(1),TB3+1
16BF 0F 01 16D2 18D2    1353 SLC  TAERR+3(2),N002 DECREMENT OUTPUT ADDRESSES.
16C5 0F 01 16DA 18D2    1354 SLC  TBERR+3(2),N002
16C8 C0 87 1663          1355 B      TA3              GO CHECK NEW BIT.
1356
16CF 3C 5C 0000          1357 TAERR MVI *-# ,X*5C*   PUT -- IN EB2 OUTPUT.
16D3 C0 87 167B          1358 B      TB3              CONTINUE CHECK.
16D7 3C 5C 0000          1359 TBERR MVI *-# ,X*5C*  PUT -- IN EB1 OUTPUT.
16DE C0 87 1693          1360 B      TC              CONTINUE CHECK.
1361
1362 *****
1363 * BITSNF *
1364 *****          THE EB1 & EB2 BYTES ARE CONVERTED
1365 *                TO A PRINTABLE BINARY FORM.
1366 *
1367 *****
16DF 00                16DF 1368 EB2T  DC  XL1*00*   TEMPORARY STORAGE FOR EB2 & EB1
16E0 00                16E0 1369 EB1T  DC  XL1*00*   BYTES.
1370
16E1 36 08 18D0          1371 BITSNF A  NOC1,ARR
16E5 34 08 16EE          1372 ST  **S.ARR
16E9 0C 01 16F4 0000    1373 MVC  **11(2),*-#

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4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
16EF 0C 01 16E0 0000 1374 MVC EB1(2),\*-> STORE EB1 & EB2 BYTES.  
16FE 3E 0E 18D0 1375 A N001.ARR  
16F9 34 08 1740 1376 ST BTNF+3.ARR STORE RETURN ADDRESS.  
16FD 3C 01 170E 1377 MVI TNF+1,X\*01' INITIALIZE BIT POINTERS.  
1701 3C 01 1724 1378 MVI TNFF+1,X\*01'  
1705 34 02 1722 1379 ST NF+3.XR2 INITIALIZE OUTPUT ADDRESSES.  
1709 34 01 1738 1380 ST NFF+3.XR1  
1381  
170D 38 00 16DF 1382 TNF TBN EB2T,X\*00' THIS BIT ON IN EB2 ?  
1711 F2 10 07 1383 JT ITSON JUMP IF SO.  
1714 3C F0 1720 1384 MVI NF+1,X\*F0' MOVE IN A 0.  
1718 F2 E7 04 1385 J NF  
171B 3C F1 1720 1386 ITSON MVI NF+1,X\*F1' MOVE IN A 1.  
171F 3C 00 0000 1387 NF MVI \*-\*,X\*00' PUT 1/0 IN OUTPUT.  
1388  
1723 38 00 16EC 1389 TNFF TBN EB1T,X\*00' THIS BIT ON IN EB1 ?  
1727 F2 10 07 1390 JT ITCN JUMP IF SO.  
172A 3C F0 1736 1391 MVI NFF+1,X\*F0' MOVE IN A 0.  
172E F2 E7 04 1392 J NFF  
1731 3C F1 1736 1393 ITON MVI NFF+1,X\*F1' MOVE IN A 1.  
1735 3C 00 0000 1394 NFF MVI \*-\*,X\*00' PUT 1/0 IN OUTPUT.  
1395  
1739 38 80 170E 1396 TBN TNF+1,X\*EC' CHECKED BIT 0 ?  
173D C0 10 0000 1397 BT \*-\* RETURN IF SO.  
1741 0E 00 170E 170E 1398 ALC TNF+1(1),TNF+1 INCREMENT BIT POINTER.  
1747 0E 00 1724 1724 1399 ALC TNFF+1(1),TNFF+1  
174D 0F 01 1722 18D2 1400 SLC NF+3(2),N002 DECREMENT OUTPUT ADRS.  
1753 0F 01 1738 18D2 1401 SLC NFF+3(2),N002  
1759 C0 E7 170C 1402 B TNF CONTINUE CHECK.  
1403  
1404 \*\*\*\*\*  
1405 \* QUES \*  
1406 \*\*\*\*\* SUBROUTINE DETERMINES IF SSW 10 IS ON.  
1407 \*  
1408 \*\*\*\*\*  
175C 34 08 1771 1409 QUES ST QS+3.ARR STORE RETURN ADDRESS.  
1761 38 80 020A 1410 TBN SBYTE2,SSW10 SSW 10 ON ?  
1765 F2 10 0A 1411 JT QST RETURN TO PRGM HALT IF SO.  
1768 0E 01 1771 18D4 1412 ALC QS+3(2),N003 INCR RETURN TO SKIP HALT.  
176E C0 E7 0000 1413 QS B \*-\* RETURN TO ROUTINE.  
1414  
1772 3D C2 0200 1415 QST CLI X'0200',X'C2' IS THIS A MODEL 'B' SYSTEM ?  
1776 C0 01 176E 1416 BNE QS GO DO NORMAL HALT IF NOT.  
177A 35 01 1771 1417 L QS+3.XR1  
177E 4C 01 02 18F0 1418 MVC 2(2,XR1),PFFF8 SET UP MODEL B HALT.  
1783 C0 E7 176E 1419 B QS NOW GO HALT.  
1420  
1421 \*\*\*\*\*  
1422 \* TIGERX \*  
1423 \*\*\*\*\* SUBROUTINE PRINTS TIO ERROR MESSAGES.  
1424 \*  
1425 \*\*\*\*\*  
1787 C0 E7 021A 1426 TIGERD B PRINT PRINT 3741 IS READY ERROR MESSAGE.  
178E C2 178B 1427 DC XL1'C2'  
178C 0E 178C 1428 DC IL1'14'  
178D 1CAE 178E 1429 DC AL2(RDY)  
178F 4001 1790 1430 DC XL2'4001'  
1791 0C 28 1F17 1E9B 1431 MVC PRT-50(41).CNCTR  
1797 C0 E7 189C 1432 D EPRNT1 PRINT IS CONNECTOR ON ?  
179B 0C 24 1F1C 1E00 1433 MVC PRT-45(37).RMOV  
17A1 C0 E7 18A7 1434 B EPRNT2 PRINT OPERATOR TO REMOVE IT IF SO.  
17A5 0C 18 1F07 1ED9 1435 MVC PRT-66(25).IFOFF  
17AB C0 E7 189C 1436 B EPRNT1 PRINT OTHERWISE.  
1437  
17AF C0 E7 17D9 1438 B MAPS POINT TO MAP CHART.  
17B3 8702 1784 1439 DC XL2'8702' -PAGE 870. ENTRY 2.  
17B5 C0 E7 0222 1440 B HALT ERROR HALT -01-.  
17B9 4001 178A 1441 DC XL2'4001'

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
178B C0 E7 0A11 1442 B BEGINN  
1443  
178F C0 E7 021A 1444 TIGERD B PRINT  
17C3 C2 17C3 1445 DC XL1'C2'  
17C4 0D 17C4 1446 DC IL1'14'  
17C5 1CA0 17C6 1447 DC AL2(HUSSY)  
17C7 4002 17C8 1448 DC XL2'4002'  
17C9 C0 E7 17D9 1449 B MAPS  
17CE 8721 17CE 1450 DC XL2'8721'  
17CF C0 E7 0222 1451 B HALT  
17D3 4002 17DA 1452 DC XL2'4002'  
17D5 C0 E7 021E 1453 B LINK  
1454  
1455 \*\*\*\*\*  
1456 \* MAPS \*  
1457 \*\*\*\*\* THE MAP CHART REFERENCE IS PRINTED. CALL  
1458 \* SUBROUTINE BY -  
1459 \*  
1460 \* B MAPS  
1461 \* DC XL2'PAGE NUMBER/ENTRY NUMBER'  
1462 \*  
1463 \*\*\*\*\*  
1464 MAPS ST TEMP.ARR STORE THE ARR.  
1465 L TEMP.XR1 LOAD ARR INTO XR1.  
1466 MNZ MAFSS-11.0(.XR1) STORE HUNDREDS DIGIT.  
1467 MNA MAFSS-10.0(.XR1) STORE TENS DIGIT.  
1468 MNZ MAFSS-9.1(.XR1) STORE UNITS DIGIT.  
1469 MNA MAFSS-1.1(.XR1) STORE ENTRY NUMBER.  
1470  
1471 B PRINT  
1472 DC XL1'86'  
1473 DC IL1'34'  
1474 DC AL2(MAPSS)  
1475  
1476 B 2(.XR1) RETURN TO ROUTINE.  
1477  
1478 \*\*\*\*\*  
1479 \* CODE \*  
1480 \*\*\*\*\* TEST HEADINGS ARE PRINTED FOR RTN07-0E.  
1481 \*  
1482 \*\*\*\*\*  
1483 CODE ST COD+5.ARR  
1484 COD MVC THC-1(1),\*-> STORE N CODE ID.  
1485 A N001.ARR  
1486 ST CCDD+3.ARR STORE RETURN ADDRESS.  
1487  
1488 CLI THC-1,X\*F1' N CODE 1?  
1489 BNE \*-+4 BRANCH IF NOT.  
1490 MVC PRT-34(17).FNCT LOAD N CODE 1 MEANING.  
1491 MVI PRT-33,X\*4E'  
1492 CLI THC-1,X\*F2' N CODE 2?  
1493 BNE \*-+4 BRANCH IF NOT.  
1494 MVC PRT-30(21).STLCR BRING IN N CODE 2 MEANING.  
1495 MVI PRT-29,X\*4E'  
1496 CLI THC-1,X\*F3' N CODE 3?  
1497 BNE \*-+4 BRANCH IF NOT.  
1498 MVC PRT-33(12).IOTRL BRING IN N CODE 3 MEANING.  
1499 MVI PRT-32,X\*4E'  
1500 CLI THC-1,X\*F5' N CODE 5?  
1501 BNE \*-+4 BRANCH IF NOT.  
1502 MVC PRT-29(22).DIGTR BRING IN N CODE 5 MEANING.  
1503 MVI PRT-28,X\*4E'  
1504  
1505 B UNPACK UNPACK CURRENT TEST PATTERN.  
1506 DC IL1'2'  
1507 DC AL2(PATRN)  
1508 DC AL2(TSPAT-C)  
1509 MVC PRT-51(4C).TSPAT BRING REST OF HEADING.



4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for function test 3741, including instructions like CLC, JNE, MVC, MNN, GOMD, DC, AL2, HDNGID, PRT, and comments such as 'LCR OR DTR TEST?', 'MOVE IN SPECIAL PATTERN.', and 'PRINT HEADINGS FOR RTN 05 - 0C.'

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for function test 3741, including instructions like CL2, AL2, DTR, TEMP, WORK, LS, LSCK, PATRN, NID, and comments such as 'INTERRUPT ROUTINE ADDRESS.', 'RESERVED AREAS', and 'EB CYCLE FAILURE FLAG.'

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4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LCC OBJECT CODE ADDR STMT SOURCE STATEMENT
1A03 1620 MSG2B EOL \*-1
1A04 D9C5E2C5E340C1D5 1A2B 1621 DC CL40\*RESET AND START.
1A0C C440E2E3C1D5E34B 1621
1A14 40404C4040404040 1621
1A1C 40404C4040404040 1621
1A24 40404C404040404C 1621
1A2C 4040404040404040 1A53 1622 MSG2 DC CL40\*
1A34 4040404040404040 1622
1A3C 4040404040404040 1622
1A44 4040404040404040 1622
1A4C 40404C4040404040 1622
1A53 1624 MSG4B EQU \*-1
1A54 C4C1E3C140C1C4C4 1A7B 1625 DC CL40\*DATA ADDRESS REGISTER FAILURE.
1A5C D9C5E2E240D9C5C7 1625
1A64 C5E2E3C5D540C6C1 1625
1A6C C5D3E4D9C5E4B4040 1625
1A74 4040404040404040 1625
1A7C 4040404040404040 1AA3 1626 MSG4 DC CL40\*
1A84 40404C4040404040 1626
1A8C 4040404040404040 1626
1A94 40404C4040404040 1626
1A9C 4040404040404040 1626
1A9E 1627
1AA4 E2E3C1E3E4E240C2 1AC4 1628 STLCR DC CL33\*STATUS BYTE-LENGTH COUNT REGISTER\*
1AAC E6E2C560D3C5D5C7 1628
1AB4 E3C40C3D6E4D5E3 1628
1ABC 40D5C5C7C9E2E3C5 1628
1AC4 D9 1628
1ACS C961D640E3D9C1D5 1AD6 1629 IOTRL DC CL18\*I/O TRANSFER LINES\*
1ACD E2C6C5D54C3C9D5 1629
1AD5 C5E2 1629
1AF7 C4C1E3C140C1C4C4 1AEB 1630 DADR DC CL21\*DATA ADDRESS REGISTER\*
1ADF D9C5E2E240D9C5C7 1630
1AE7 C9E2E3C5D9 1630
1AFC C4C9C1C7D5D6E2E3 1B11 1631 DIGTR DC CL38\*DIAGNOSTIC BYTE-DATA TRANSFER REGISTER\*
1AF4 C9C340C2E2E3C5E0 1631
1AFC C4C1E3C140E3D9C1 1631
1B04 D5E2C6C5D540D9C5 1631
1B0C C7C5E2E3C5D9 1631
1B12 C5C240C3E8C3D3C5 1B29 1632 BIGGEB DC CL24\*EB CYCLE ANALYSIS CHECK.\*
1B1A 40C1D5C1D2E2E2C5 1632
1E22 E240C3C8C5C3D24B 1632
1B2A 5C5CC5C2E740C3E8 1B46 1633 EBX DC CL29\*\*EBX CYCLE FAILED. N CODE X.\*
1B32 C3D3C540C6C1C9D3 1633
1E3A C5C44R40D540C3D6 1633
1B42 C4C540E74B 1633
1B47 5C5CC2D6E3C840C5 1B68 1634 EB12 DC CL34\*\*\*EOTH EB CYCLES FAILED. N CODE X.\*
1B4F C240C3E8C3D3C5E2 1634
1E57 4CC6C1C9D3CEC44E 1634
1B5F 40D540C3D6C4C540 1634
1E67 E74B 1634
1B65 5C5CC1D3D340C5C2 1B7F 1635 ALEB DC CL23\*\*\*ALL EB CYCLES FAILED.\*
1B71 40C3E8C3D3C5E240 1635
1B79 C6C1C9D3C5C44E 1635
1B80 5C5CC1D3D340C5C2 1B97 1636 ALEBX DC CL24\*\*\*ALL EBX CYCLES FAILED.\*
1E8B E740C3E8C3D3C5E2 1636
1B90 40CC1C9D3C5C44E 1636
1E9E E3C5E2E340C4C1E3 1B8B 1637 TSCYC DC CL36\*TEST DATA TRANSFER DURING EB CYCLES.\*
1EA0 C140E3D9C1D5E2C6 1637
1BAE C5D940C4E4D9C5C5 1637
1B80 C740C5C240C3E6C3 1637
1E8B C3C5E24B 1637
1BBC C4C9C1C7D5D6E2E3 1BCA 1638 DIAG DC CL15\*DIAGNOSTIC BYTE\*
1BC4 C9C340C2E2E3C5C5 1638
1BCB D3C9D661E2D5E240 1BE0 1639 LSCKK DC CL22\*LIC/SNS COMPARE CHECK.\*
1BD3 C2D6D4D7C1D9C5C40 1639
1ECE C3C8C5C3D24B 1639

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4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

ERR LCC OBJECT CODE ADDR STMT SOURCE STATEMENT
1BE1 D3C9D640C6C1C9D3 1C0B 1640 LIDRST DC CL43\*LIO FAILED TO RESET LENGTH COUNT REGISTER.\*
1BE9 CEC440E3D640D9C5 1640
1EF1 E2C5E340D3C5D5C7 1640
1BF9 E3C840C3D6E4D5E3 1640
1C01 40D9C5C7C9E2E3CE 1640
1C09 D54B49 1640
1C0C C4C9C1C7D5D6E2E3 1C21 1641 SIOCK DC CL22\*DIAGNOSTIC BYTE CHECK.\*
1C14 C9C340C2E2E3C540 1641
1C1C C2C8C5C3D24B 1641
1C22 E3C5E2E340C1C2C9 1C31 1642 TSID DC CL16\*TEST ABILITY TD\*
1C2A D3C9E3E840E3D640 1642
1C32 C7D640E3D640F3F7 1C53 1643 MAPSS DC CL34\*GO TO 3741 MAPS. PAGE 000 ENTRY 0.\*
1C3A F4F1A0D4C1D7E2E6 1643
1C42 40D7C1C7C540F0F0 1643
1CA4 F040C5D5E3D9LE4C 1643
1CS2 F04B 1643
1C54 D3D6C1C461E2C5D5 1C7D 1644 VNOD DC CL42\*LOAD/SENSE DATA ADDRESS REGISTER WITH\*
1CEC E2C540C4C1E3C140 1644
1C64 C1C4C4D9C5E2E240 1644
1C6C D5C5C7C9E2E3C5D9 1644
1C74 40F6C9E3C8404040 1644
1C7C 4040 1644
1C7E 40C2C9E340D7C1E3 1C8B 1645 LSDAR DC CL14\* BIT PATTERNS.\*
1CE6 E3C5D9D5E24B 1645
1C8C C5E5C5D5 1C8F 1646 EVEN DC CL4\*EVEN\*
1C90 DEC4C440 1C93 1647 ODD DC CL4\*ODD\*
1C94 F3F7F4F140C9E240 1CA0 1648 BUSSY DC CL13\*3741 IS BUSY.\*
1C9C C2E4E2E84B 1648
1CA1 F3F7F4F140C9E240 1CAE 1649 RDY DC CL14\*3741 IS READY.\*
1CA9 D9C5C1C4E84B 1649
1CAF E3C5E2E340F3F7F4 1CC5 1650 YBSSY DC CL23\*TEST 3741 FOR NOT BUSY.\*
1CE7 F140C6D6D940D5D6 1650
1CBF E340C2E4E2F84B 1650
1CC6 E3C5E2E340F3F7F4 1CDD 1651 TORDY DC CL24\*TEST 3741 FOR NOT READY.\*
1CCE F140C6D6D940D5D6 1651
1CDE E340D9C5C1C4E4E4B 1651
1CDE D540C3D6C4C540E7 1CE6 1652 THD DC CL5\*N CODE X.\*
1CEE 4E 1652
1CE7 F040F140F240F340 1CF5 1653 BITS DC CL15\*0 1 2 3 4 5 6 7\*
1CEF F440F540F640F7 1653
1CF6 60C5C2F140C2E8E3 1CFF 1654 EB1 DC CL10\*-EB1 BYTE-\*
1CFE C560 1654
1D00 60C5C2F240C2E8E3 1D09 1655 EB2 DC CL10\*-EB2 BYTE-\*
1D0E C560 1655
1D0A 5CC5D9D9D6D95C 1D10 1656 ERRORS DC CL7\*ERRR\*\*
1D11 D9C5C1C461E6D9C9 1D2B 1657 NTRST DC CL27\*READ/WRITE LATCH NOT RESET.\*
1D19 E2C540D3C1E3C3C8 1657
1D21 40E5D6E340D9C5E2 1657
1D29 C5E34B 1657
1D2C C9D5E3C5D9D9E4D7 1D4B 1658 INTR DC CL29\*INTERRUPT ENABLE RSET CHECK.\*
1D34 E340C5D5C1C2D3C5 1658
1D3C 40D5C5E2C5E340C3 1658
1D44 C8C5C3D24B 1658
1D49 D5D660D6D740D3C1 1D61 1659 NOSEE DC CL25\*NO-OP LATCH FAILS TO SET.\*
1D51 E3C3C840C6C1C9D3 1659
1D55 E240E3D640E2C5E3 1659
1D61 4R 1659
1D62 D5D660D6D740D3C1 1D7C 1660 NORES DC CL27\*NO-OP LATCH FAILS TO RESET.\*
1D6A E3C3C840C6C1C9D3 1660
1D72 E240E3D640D9C5E2 1660
1D7A C5E34B 1660
1D7D D3D6C1C461E2C5D5 1DA4 1661 TSPAT DC CL40\*LOAD/SENSE WITH TEST PATTERN -XXXX- THE\*
1D85 E2C540E6C5E3C840 1661
1D8D E3CE2E340D7C1E3 1661
1D95 E3C5D9D54060E7E7 1661
1D9C E7E76040E3C8CE40 1661
1DA5 4C60E7E7604C 1DAA 1662 SHORT DC CL6\*-XX-\*
1DAB E3C5E2E340C1C2C9 1DDD 1663 INVAL DC CL51\*TEST ABILITY OF 3741 TO REJECT 15 INVALID COMMANDS.\*

DATE 16AUG74 15NOV74
EC NO. 824765 824E70

PROG ID 401-1 PAGE 14A

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

EPR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

10E3 D3C5E3E840D6C640 1663
10BB F2F7F4F140E3D64C 1663
10C3 D9C5D1C5C3E340F1 1663
1DCE F540C9D5E5C1D3C9 1663
1DD3 C440C3D6D4D4C1D5 1663
1DCE C4E24B 1663
1DCE C4C640E2E8E2E3C5 1E01 1664 INVL DC CL36*DD SYSTEM RESET AND START, 16 TIMES.*
1CE6 D440C9C5E2C5E340 1664
1DFE C1D5C440E2E3C1D9 1664
1DFE E2E8E2E3C5D440D5 1664
1DFE D4C5E24B 1664
1E02 C5E7D7C5C3E340D7 1E32 1665 DC CL49*EXPECT PROCESS CHECK AFTER EACH SYSTEM RESET AND *
1E0A D9C6C3C5E2E24CC3 1665
1E12 CEC5C3C240C1CEE3 1665
1E1A C5D540C5C1C3C840 1665
1E22 E2E8E2E3C5D440D5 1665
1E2A C5E2C5E340C1D5C4 1665
1E22 40 1665
1E33 E2E3C1D9E34B 1E38 1666 IVL DC CL6*START.*
1E39 C9D5E5C1D3C9C440 1E5C 1667 FLWNG DC CL36*INVALID COMMAND WAS ACCEPTED. XXX N*
1E41 C3D6D4D4C1D5C440 1667
1E49 E6C1E240C1C3C2C5 1667
1E51 D7E3C5C44B4040E7 1667
1E59 E7E740D5 1667
1E5D E2C5D5E2C5E40E3C8 1E66 1668 SNTHM DC CL10*SENSE THE *
1E6E C540 1668
1E67 E2C5D5E2C5E40C3C8 1E72 1669 SNCKMS DC CL12*SENSE CHECK.*
1E6F C5C3D24B 1669
1E73 C5C5D5D6E3C55C5C 1E9B 1670 CNCTR DC CL41***NOTE** IF A WRAP CONNECTOR IS ATTACHED.*
1E7B 40C5C640C140E6D9 1670
1E23 C1D740C3D6D5D5C5 1670
1E8B C3E3D6D540C9E240 1670
1E93 C1E3E3C1C3C8C5C4 1670
1E9E 6B 1670
1E9C D5C5D4D6E5C5E40C9 1EC0 1671 RMOV DC CL37*REMCVE IT AND CO SYSTEM RESET. START.*
1EA4 E340C1D5C440C4D6 1671
1EAC 4CE2E8E2E3C5D440 1671
1EB4 C9C5E2C5E3E840E2 1671
1EBC E3C1D9E34B 1671
1EC1 C5C640C3D6D5D5C5 1ED9 1672 IFOFF DC CL25*IF CCONNECTOR IS OFF THEN.*
1EC9 C3E3D6D540C9E240 1672
1ED1 C6C6C640E3C8C5D5 1672
1ED9 6B 1672
1EDA F3F7F4F140C9D5E3 1EEE 1673 SIOC4 DC CL21*3741 INTERRUPT CHECK.*
1EE2 C5D9C9E4D7E340C3 1673
1EEA C8C5C3D24B 1673
1EEF 1F49 1674 PPT DS CL51 PRINT FIELD.
1F4A 40 1F4A 1675 DC XL1*40* CLEARING BYTE.
1676
1677 *****
1678 * EQUATES *
1679 *****
0008 1680 ARR EQU X*08*
0222 1681 HALT ECU X*222*
0216 1682 LINK EQU X*216*
022A 1683 LOAD EQU X*22A*
021A 1684 PRINT ECU X*21A*
021E 1685 UNPACK EQU X*21E*
0001 1686 XR1 EQU X*01*
0002 1687 XR2 EQU X*02*
0084 1688 IARS EQU X*E4*
0A03 1689 RTN# ECU X*0A03*
0080 1690 SSW10 EQU X*E0*
0080 1691 SSW00 EQU X*E0*
0208 1692 SBYTE0 ECU X*0208*
020A 1693 SBYTE2 EQU X*020A*
0A07 1694 FRTN EQU X*CA07*
18CE 1695 H0000 EQU N0C0

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18D0 1696 H0001 EQU N0C1
17BF 1697 DROPU ECU TICERU
1EC0 1698 INTRD EQU RMCV
0A11 1699 END BEGINN

```





4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

OBJECT CARD LISTING

THE CHARACTER \* INDICATES A BLANK COLUMN AND THE CHARACTERS D E M INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

```

GBK GED PN 55 58420 EC 824870 3741 ATY TEST W/ 0 WRAP CONNECTOR 84088488 ..... 40110000
T+-Y:PAD 6 B-7 *4AD D BVG /OH EEP*E 4C-OM*BF-R SFV<ESA*HCEV-KJ* HO-DHMLEAB-**B Z <BYD E U40110001
T+-Z5A33-EU32/06 885Z<OH*BHUC/OH* MD&D BW# /OHEJJ- *7ME/OH*PP- B|KE ** /S /1IG - H5DB G /Y 6 M40110002
T+-DOJJ**1MBEOM* PP- E|KEBE** /OH C 0 M*LS -T D M OC L: A9WCB -FJ. D|DN-FXBG /ZF01* I&M< :6M40110003
T+-CEY-KJ*H&MD 03XEEE#D1JYT+<DK .|*EBE#D1JATY0+* PP- B|CABB>X( 6. .B>X -&HOOH>L>B ***** 1:840110004
T+-M EGE*WGE*8 6 SI 886 /OD _ |C UI:=A9WCAD-B/A. 0|DX-88BG /ZFC1* I&M<C/>IGA. /1) 1BCD 43<40110005
T+-/_|CACB34( 6X *B3? -&HOOH>L>0 ***** DOM*PEG:ADH* BHU DOH*EE-M E:U 8- HM0A BE-OIG?- 1R-0 6KB40110006
T+->*C/EGF&Y&K1& HCH*BFURSG4V Z&1 EG4U-KXBGE570|CO 0J&>FCE .V->MOMC BEXBGD&X ***** A*8 GE*U 88 40110007
T+-P&AG /OHSE P /OHCA- ((8BG /Z EIA>8&H&A6;/OH* FP- B|CEAF|H1&T 2KM&QTEEF|HO&JU |<OH RJ-40110008
T+-OKFJDOJAU<DKM RE*HAFJW4 675| RQLOAB**> D C .*TY FJ4+ ?8B*X | 675F( 9*07#01 .8T4 EK840110009
T+-I(EIU)OHDKVCS LFJ7 -C1=[EHRG*E ACHQ*OAL)OHDKXT4 DFJ7 -E2V|CORG*E ACH&8&AU)0A <>YS FJ4 LI-40110010
T+-2HOA <>T-8FJ7 D 3N+B RG* EC(M 8AAU)0A <8C-HFJ7 C 30+ DFG* EC&? /OHM|D85<BGCHY 88/X J0440110011
T+-3CS 0PG005V8E GCJU<E/8EF7* /04 R|D8R*HGE332F<- 2/C&2*A_KCBD-DA YOH*(FL31F4M&8AU )0A RR040110012
T+-3=C<EEE/X>OH* <4T31F2#2/38E8/_ E+A RG* EC+UBD/X >CH*#L31F2#2/2K 8*A_E+ ERG* EC&E 88/X 9-Y40110013
T+-4S.XECE<-E&JX >EY*H|H&JL31F2E <GAB.F4S /CH&0/- SHV FOM*QZ8BGE*W HM*EG SI AXBG /Q G 4:8<40110014
T+-54ECCAFJU0&KB GF C1OH*PP- B|CE AFJU0&JUFOM*MS 1OH*EEXBGE*WHU*E G SI A&BG /OH 6 XC D PLH40110015
T+-E7FJU0&XBG F C 1OH*PP- B|CEAFJU 0&JUPOM*MS T1OH* EEXECE*WHU*BG SI 6<BG /OI TTC D RFJ- :Y040110016
T+-7DS&EGF C2OH* FP- B|CEBFJU0&U P| REXEGER-1&8B G /1 /1-RSJG /OH SE X /OHDB- +E-0 AFJU 3-H40110017
T+-EVF+ /1- X&B GE570|CO1&/UR<OH RE04 F+BRE*HAGTO FJ8 /1KHB? /OH COM*P6QUJOM*8HU HON* JR840110018
T+-5 /E /OH&OSX *84 <OH*P6OUKOH* BHU <OH*EE-X C2- < 11*GM /OF&JT- *S4B.OH*PP- B|CE DF+H :E40110015
T+-8<D&E04AF+H RE*H&DTEDF+ 0JAU PC&8DBAUF&PDEE&E 6 /F&ADTOM*P6QU LOM*8HUAXOM*BE-0 CS* :<40110020
    
```

4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

```

T+->OC <*-J2LOH* BFUCBG*_<CGES7 0|CO1JATU<D&REZE DF< 0JAUPOH*BE-4 COK<< JURF+8 /1- ' * ' :D40110021
T+-BJ/1)DCOB<M RFLA&FJ1& AUOON* NSAC5OH*BEK&GE*W I<*EG SI D<BG /Q + B*C DRFJTDH* Q |M *9Y40110022
T+-<OH*PP- B|CE EFJU0&JUP| REXB GEH-J*8G /S /1- RELC /OH&AG /OH OCO |O+8G&PE7&XP T&K M NR*40110023
T+-GE*GB48N 2)P T1)XRG(-T&(|ASD| HK4A OM-H?3DOF|Y 8 JTAON*PP- B|CE AF(#3& NOJJT&+ D QO-H 81 40110024
T+-BC&A&DAU*OH* NSA. /OHOOH*P6QV J0+*8HU K0+*BE1& G /1.EEJ#>A, /1- RSN. /OH&EA. /OH OD 0.040110025
T+-*DE. /1N&X(X E&XFT&C<PNO*.L1MC 15:|E5)XU<E( 4&G TCE./OH*P7&BGE57 0|CO1&JT:84 B84 D<OH JSM40110026
T+-/ 8F|CEDAT#01 B&XBG />BGJ&HEA| /1-RSPG /OH&EA| /OH<CDE 6S&8&EPE 18XPT&(XEO*J O&G L44 8H440110027
T+-/A34&ETCB/>6DA 6CA 6DA OH*P7&B GE570|CO1&JY:84C OH*P7&3AEF|0& IU *OH*N&AL /1A*OH* P6QU 8H40110028
T+->U*BG SI <KB 6 /536 -0JYT=OH* 6:/M DJT /1N&X. EE4CW6*XT1MCC0| L&(|A&B|HK4A 6DA 6D :H40110029
T+-CZ&EBE# /1) 1BCOB<MD077(B CA EF|0BAJU*OH*H&AP /1CTOH*P6R 1OH* BHU N*4*BE7( BCA EF|8 -BD40110030
T+-CU|E OM-H&ACL4 NE-| 6MOOH*8H-C /OH&E0/X)H4 DOH* F6Q&KOH*8HU OOH* BE/< DNL /1N&X&L O&K<< :D40110031
T+-E-E_PTE)8L&|E 6>|A&:( 2OGCK4A 6CA 6<EBE# /1) 1&COE<MDC77(C*8B 6 /OH AF&OH*N).L D5L 6. 40110032
T+-F&O*8AB*XC1&C 2E+.T0)XTE<V/5U_ 6CA 6DC /1)1&CO 8MCO3&EBE#*3J|" /OH&E& KH&8&EPE 58X M RDM40110033
T+-GH&ACAS*J 6*P S1:( 5)R-5_) 4&G YOB/.6DA OH*P7&E GE570|CO1&JT+84D <DHM:3-DB>.2UC& OE/U )1U40110034
T+-/H&CL-CFC32C * A&:/1*84 HCDMO*8B GD+. /OH&E0/X)-D OOH*P6HAKOH*8HU OOH*8H-C /OH&E0/U )QM =8H40110035
T+-1.E&EGE*W&M*8 G SI E&BG SY EYC **00CF&4 00C < O*8&G /Z&C171&.6 /OH&E 8&: 4&EG /Y F(18 M/<40110036
T+-HF+<EG SI 8XB <ETA4 8 CF|Y0&AT =OH&L:=-NBUCOC-D ** 1T&DQO*8BGD77 S5:1 -BA <Q&TA GF|8 -E&X40110037
T+-A0M*LI:=-NBUC 7C-D 1TE&M Q3&B GD77L2)R 8 BA < O&TECF<# /1(#4&X O&|<+ 6 CF|Y1J/T +OH* 8OH40110038
T+-&C77L2)R -8 A <O&TEGF<# /1( #4&XO&|+ 6 CF|. A&J.6OH*LI:={15UC 1C-D 1T&OM&K=*8 GD7% OR&40110039
T+-<7&E&XO&|&+ 6 CF|.AJJ<COM*LI:={ 15UC5C-D 1T&O*P O LG&EGD77T2)R -8 A <Q&8&EGD3. /1( #8BU KE%40110040
T+-/2&EUC7C-D 1T O&AM OH*LI:=-15UC 5C-D 1T&C&AO O*P LI:=-15UC6C-D 1T O&4* OH*LI:=-15UC 7C < O&440110041
T+-/_ <RC*BG /O 6&ATD& -L5 OD&V0. *** OTG1H:P 0 64# 1P OHG1Y*9&BG /. BO1'1&AU<D/>IGA. /1* '0U40110042
    
```



4011 3741 FUNCTION TEST WITHOUT THE WRAP CONNECTOR

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/8<2\*J 0\*5M5<G N1+1.1(R 8>TSB0P M0(XE8XPT0<GN1DC S08GRB6\_ 0-R 80X H1:1.1:-P1\*|70(~ R5X< J1440110087

T+/9G11.50<|H1\*| K0<GF00PR0<PA00/ 8>TSB0FM0(XE8XP T0<GN1DCS00SR0A? I5:PA40XD0<|05(L A5\*0 K0\*40110088

T+/:B0+SABUCA00| E5=|E1D\_ 0+-X94C N0XPN0XN 00TE0+. E5:0E0<|H1\*|KK51 \*5)ST:NI\*0<XF0<E 9\_U :-040110089

T+/:0) 0\*5N5\*P C0\*SR0<X50<GT00G C2<PDE\*XEE(SV1MC I04CA5\*J 1(R 0>T S00PM0(XE8XFT04C S00D E9\*40110090

T<A006:(.2\*0 0\*0 N0\*PC0\*SR0<X50(S F1UCT2<PNE" |7:|E 2)PT1)X00(-T0<| H1\*|KK0 ..... 20440110091

.....  
T A\*MS ..... RBB40110092

EB/E0E7\*0-DC\*PH0 =7M0F| | C FX ASC R A SD 0 ..... 11350908741 121745#840110093

----- LAST PAGE -----



4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
2 *                               LAST CHG 108 01 74
3                               DECK 4
4                               SEQ 0
0000 5 LSTOC START 0
CA00 6 TREP
7 ORG X'800'
8 *****
9 * 3741 FUNCTION TEST          USING -WRAP CONNECTOR *
10 *****
11 * SECTION PREFACE          *
12 *****
0A00 4021 0A01 13 DC XL2'4021' PROGRAM ID AND REVISION LEVEL
0A02 00 0A02 14 DC XL1'00' SECTION FLAGS
0A03 01 0A03 15 DC XL1'01' CURRENT ROUTINE NUMBER
0A04 0000 0A05 16 DC XL2'C000' RESERVED
0A06 0A0D 0A07 17 DC AL2(BEGIN) FIRST ROUTINE ADDRESS
0A08 FFFF 0A09 18 DC XL2'FFFF' ERROR TABLE ADDRESS
0A0A 405000 0A0C 19 DC XL3'405000' SECTION PREFACE UNIT DEF. TABLE
20
21 *****
22 * INTRODUCTION TELL C.E. TO SYSTEM RESET AND START. *
23 *****
CA00 01 0A0D 24 BEGIN DC XL1'01' DUMMY ROUTINE SETUP.
CA0E 00 0A0E 25 DC XL1'00'
CA0F 0A51 0A10 26 DC AL2(RTN01)
27
0A11 C0 87 021A 0A11 28 BEGINN EQU * PRINT BEGINNING INSTRUCTIONS
0A1E 41 0A15 29 B PRINT
0A16 27 0A16 30 DC XL1'41'
0A17 1CFA 0A18 31 DC AL1(MSG1-MSG18)
0A19 40E0 0A1A 32 DC AL2(MSG1)
0A1B C0 87 021A 0A1A 33 DC XL2'40E0'
0A1F 06 0A1F 34 B PRINT
0A20 27 0A20 35 DC XL1'06'
0A21 1721 0A22 36 DC AL1(MSG2-MSG28)
0A23 3C 40 1D69 0A22 37 DC AL2(MSG2)
0A27 0C 5A 1D68 1D69 38 MVI PRT+1,X'40' SET UP 'CLEARING' BYTE.
0A2D C2 01 0A51 39 MVC PRT(91),PRT+1 CLEAR PRINT FIELD.
0A31 34 01 0A07 40 LA RTN01,XR1 RESTORE REAL ROUTINE 01 ADDRESS.
0A35 3D E0 0A4C 41 ST FRTN,XR1
0A39 F2 81 07 42 CLI HPLXX,X'E0' CURRENT HALT -E0- ?
0A3C 3C E0 0A4C 43 JE ALTER JUMP IF SO.
0A40 F2 E7 04 44 MVI HPLXX,X'E0' SET UP FOR HALT -E0-.
0A43 3C E1 0A4C 45 J **7
0A47 C0 87 0222 46 ALTER MVI HPLXX,X'E1' SET UP FOR HALT -E1-.
0A4E 40E1 0A4C 47 B HALT INLINE HALT -E0- OR -E1-.
0A4D C0 87 0A11 48 HPLXX DC XL2'40E1'
49
50 B BEGINN REPEAT IF NO SYSTEM RESET.

```

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
52 *****
53 * RTN01 *
54 *****
55 *
56 * ROUTINE 01 THE PROGRAM SENSES FOR THE WRAP *
57 * CARD ID BITS -F900-. *
58 *
59 *****
0A51 01 0A51 60 RTN01 DC XL1'01' ROUTINE NUMBER
0A52 00 0A52 61 DC XL1'00' NO MANUAL INTERVENTION REQUIRED
0A53 0B05 0A54 62 DC AL2(RTN02) ROUTINE 02 ADDRESS.
63
0A55 C0 87 021A 64 B PRINT PRINT ROUTINE TEST HEADING.
0A59 45 0A59 65 DC XL1'45'
0A5A 2B 0A5A 66 DC IL1'43'
0A5B 189A 0A5C 67 DC AL2(IDBIT)
0A5D 40A1 0A5E 68 DC XL2'40A1'
69
0A5F C1 40 0A83 70 TIO SPECL,X'40' BRANCH IF 3741 IS NOT READY.
0A63 F3 40 0D 71 SIO X'00',X'40' ISSUE RESET TO 'CLEAR' 3741
0A64 C1 42 1352 72 TIO BUSY,X'42' BRANCH IF 3741 IS BUSY.
73
0A6A C0 87 13C3 74 B QUES TEST FOR SSW10 ON.
0A6E F0 3C 3C 75 MPL X'3C',X'3C' HALT -FF- IF ON.
76
0A71 31 41 16A7 77 LIO H0C80,X'41' SET FUNCTION REGISTER TO DIAG MODE.
0A75 31 45 1699 78 LIO H0000,X'45' CLEAR DATA TRANSFER REGISTER.
0A79 31 42 1699 79 LIO H0C00,X'42' CLEAR LENGTH COUNT REGISTER.
0A7D 31 44 16CF 80 LIO DATA,X'44' LOAD DATA ADDRESS REGISTER.
81
0A81 30 43 0AA1 82 SNS SNS01,X'43' SENSE THE TRANSFER LINES FOR -F900-.
0A85 0D 01 0AA1 0A9F 83 CLC SNS01(2),SNS01-2 ARE THE ID BITS ON ?
0A8B C0 81 0216 84 BE LINK RETURN TO DCP IF ID BITS ARE ON.
85
0A8F C0 87 021A 86 B PRINT PRINT ID SENSE CHECK.
0A93 C2 0A93 87 DC XL1'C2'
0A94 0F 0A94 88 DC IL1'15'
0A95 18A9 0A96 89 DC AL2(IDCK)
0A97 4020 0A98 90 DC XL2'4020'
91
0A99 C0 87 155B 91 B ERROR DUMP I/O TRANSFER LINES.
0A9D 03 0A9D 92 DC XL1'03'
0A9E F900 0A9F 93 DC XL2'F900' -EXPECTED ID BITS.
0A9D 0000 0AA1 94 SNS01 DC XL2'0000' -ACTUAL ID BITS.
0AA2 FF 0AA2 95 DC XL1'FF'
96
0AA3 C0 87 139L 96 B NAPS POINT TO MAP CHART.
0AA7 9091 0AAB 97 DC XL2'9091' -PAGE 909, ENTRY 1.
0AA9 C0 87 0222 98 B HALT ERROR HALT -20-.
0AAD 4020 0AAE 99 DC XL2'4020'
100 B LINK RETURN TO DCP.
101
0AB3 30 43 0AA1 102 SPECL SNS SNS01,X'43' SENSE TRANS LINES FOR -0000-.
0AB7 0D 01 1699 0AA1 103 CLC H0000(2),SNS01 ARE TRANS LINES ALL ZERO'S ?
0ABD C0 01 133B 104 SNE NTRDY GO PRINT NOT READY ERROR IF NOT.
0AC1 3C 5C 1D2F 105 MVI PRT-57,X'5C' GENERATE A LINE OF '*S'.
0AC5 0C 20 1D2E 1D2F 106 MVC PRT-58(33),PRT-57 PRINT THIS LINE.
0ACE C0 87 136C 107 B EPENT1
0ACF DC 21 1D2F 10CE 108 MVC PRT-57(34),H000 EPENT1
0AD5 C0 87 136C 109 B EPENT1 PRINT CONNECTOR NOT ATTACHED.
0AD9 0C 1L 1D2C 18EA 110 MVC PRT-60(31),H00K EPENT1
0ADF C0 87 136C 111 B EPENT1 PRINT HOOK IT UP.
0AE3 3C 5C 1D2F 112 MVI PRT-57,X'5C' GENERATE A LINE OF '*S'.
0AE7 0C 20 1D2E 1D2F 113 MVC PRT-58(33),PRT-57 PRINT THIS LINE.
0AED C0 87 136C 114 B EPENT1
0AF1 0C 16 1D24 179C 115 0000 MVC PRT-68(23),INTRO EPENT1
0AF7 C0 87 1362 116 B EPENT6 PRINT DD SYSTEM RESET, START.
0AFB C0 87 0222 117 B HALT INLINE HALT -E2-.
0AFF 40E2 0B00 118 DC XL2'40E2'
0B01 C0 87 0AF1 119 B DCCC REPEAT IF NO SYSTEM RESET.

```

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
121	*****				
122	* RTN02 *				
123	*****				
124	*				
125	* ROUTINE 02				WRAP-AROUND TEST. LOAD DATA TRANS REG WITH
126	*				-AA- AND SENSE THE I/O TRANS LINES FOR AN
127	*				-F9AA-.
128	*				
129	*****				
0805 02	0805	130	RTN02	DC	XL1'02'
0806 00	0806	131		DC	XL1'00'
0807 0862	0808	132		DC	AL2(RTN03)
		133			
0809 0C 01 1954 1601		134	MVC		PAT-2(2).CAA
080F C0 87 021A		135	B		PRINT
0813 41	0813	136	DC		XL1'41'
0814 25	0814	137	DC		IL1'37'
0815 190F	0816	138	DC		AL2(WRP)
0817 40A2	0818	139	DC		XL2'40A2'
0819 C0 87 021A		140	B		PRINT
081D 05	081D	141	DC		XL1'05'
081E 12	081E	142	DC		IL1'18'
081F 1956	0820	143	DC		AL2(PAT)
		144			
0821 C0 87 1310		145	B		INITL
		146			
0825 C0 87 13C3		147	B		QUES
0829 F0 3C 3C		148	MPL		X'3C',X'3C'
		149			
082C 31 45 1689		150	LIO		MFGAA,X'45'
0830 30 43 0850		151	SNS		SNS02,X'43'
		152			
0834 0D 01 0850 084E		153	CLC		SNS02(2),SNS02-2
083A C0 81 0216		154	BE		LINK
		155			
		156	* ROUTINE 02 ERROR MESSAGE *		
		157			
083E C0 87 021A		158	B		PRINT
0842 C2	0842	159	DC		XL1'C2'
0843 1E	0843	160	DC		IL1'22'
0844 1925	0845	161	DC		AL2(WRPCK)
0846 4021	0847	162	DC		XL2'4021'
0848 C0 87 155B		163	B		ERROR
084C 03	084C	164	DC		XL1'03'
084D F9AA	084E	165	DC		XL2'F9AA'
084F 0000	0850	166	DC		XL2'0000'
0851 FF	0851	167	DC		XL1'FF'
0852 C0 87 139C		168	B		MAPS
0856 9161	0857	169	DC		XL2'9161'
085E C0 87 0222		170	B		HALT
085C 4021	085D	171	DC		XL2'4021'
085E C0 87 0216		172	B		LINK
		173			
		174			
		175	*****		
		176	* RTN03 *		
		177	*****		
		178	*		
		179	* ROUTINE 03		WRAP-AROUND TEST. LOAD DATA TRANS REG WITH
		180	*		-55- AND SENSE THE I/O TRANS LINES FOR A
		181	*		-FD55-.
		182	*		
		183	*****		
0862 03	0862	184	RTN03	DC	XL1'03'
0863 00	0863	185		DC	XL1'00'
0864 08F4	0865	186		DC	AL2(RTN04)
		187			
0866 0C 01 1954 1603		188	MVC		PAT-2(2).CSS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
086C C0 87 021A		189	B		PRINT
0870 41	0870	190	DC		XL1'41'
0871 25	0871	191	DC		IL1'37'
0872 190F	0873	192	DC		AL2(WRP)
0874 40A3	0875	193	DC		XL2'40A3'
		194			
0876 C0 87 021A		195	B		PRINT
087A 05	087A	196	DC		XL1'05'
087B 12	087B	197	DC		IL1'18'
087C 1956	087D	198	DC		AL2(PAT)
		199			
087E C0 87 1310		200	B		INITL
		201			
0882 C0 87 13C3		202	B		QUES
0886 F0 3C 3C		203	HFL		X'3C',X'3C'
		204			
0889 31 45 1687		205	LIO		MFD55,X'45'
088D 30 43 08E2		206	SNS		SNS03,X'43'
		207			
0891 0D 01 08E2 08E0		208	CLC		SNS03(2),SNS03-2
0897 F2 01 36		209	JNE		ERDTR
		210			
089A 31 45 1699		211	LIO		M0000,X'45'
089E 30 43 088E		212	SNS		SNS03,X'43'
		213			
08A2 0D 01 089E 08BC		214	CLC		SNS03(2),SNS03-2
08A8 C0 81 0216		215	BE		LINK
		216			
		217	* ROUTINE 03 ERROR MESSAGES *		
		218			
08AC C0 87 021A		219	B		PRINT
08B0 C2	08B0	220	DC		XL1'C2'
08B1 1F	08B1	221	DC		IL1'31'
08B2 1944	08B3	222	DC		AL2(TRLER)
08B4 4023	08B5	223	DC		XL2'4023'
		224			
08B6 C0 87 155B		225	B		ERROR
08BA 03	08BA	226	DC		XL1'03'
08BE F900	08BC	227	DC		XL2'F900'
08BD 0000	08BE	228	DC		XL2'0000'
08BF FF	08BF	229	DC		XL1'FF'
08C0 C0 87 139C		230	B		MAPS
08C4 9192	08C5	231	DC		XL2'9192'
08C6 C0 87 0222		232	B		HALT
08CA 4023	08CB	233	DC		XL2'4023'
08CC C0 87 0216		234	B		LINK
		235			
08D0 C0 87 021A		236	ERDTR		B
08D4 C2	08D4	237	DC		XL1'C2'
08D5 1E	08D5	238	DC		IL1'22'
08D6 1925	08D7	239	DC		AL2(WRPCK)
08D8 4022	08D9	240	DC		XL2'4022'
		241			
08DA C0 87 155B		242	B		ERROR
08DE 03	08DE	243	DC		XL1'03'
08DF FD55	08E0	244	DC		XL2'FD55'
08E1 0000	08E2	245	DC		XL2'0000'
08E3 FF	08E3	246	DC		XL1'FF'
08E4 C0 87 139C		247	B		MAPS
08E8 9191	08E9	248	DC		XL2'9191'
08EA C0 87 0222		249	B		HALT
08EE 4022	08EF	250	DC		XL2'4022'
08F0 C0 87 0216		251	B		LINK

PRINT WRAP TEST HEADING.

PRINT TEST PATTERN.

INITIALIZE THE 3741

TEST FOR SSW10 ON.  
HALT -FF- IF ON.

LOAD THE DATA TRANS REG WITH A -55-.  
SENSE THE TRANS LINES FOR -FD55-.

DID THE DATA WRAP OK ?  
JUMP IF DID NOT.

CLEAR THE DATA TRANS REG.  
SENSE THE TRANS LINES FOR -F900-.

DID THE TRANS LINES GET CLEARED ?  
RETURN TO DCP IF SO.

PRINT TRANSFER RESET CHECK.

DUMP I/O TRANSFER LINES.

-EXPECTED.  
-ACTUAL.

POINT TO MAP CHART.  
-PAGE 919. ENTRY 2.  
ERROR HALT -23-.

RETURN TO DCP.

PRINT WRAP CHECK.

DUMP I/O TRANSFER LINES.

-EXPECTED.  
-ACTUAL.

POINT TO MAP CHART.  
-PAGE 919. ENTRY 1.  
ERROR HALT -22-.

RETURN TO DCP.

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC	DEJECT CODE	ADDR	STMT	SOURCE STATEMENT	
		253	*****		
		254	* RTN04 *		
		255	*****		
		256	*		
		257	* ROUTINE 04	THE READ & WRITE CALL DRIVERS AND	
		258	*	I/O SELECTS ARE TESTED FOR ACTIVATION.	
		259	*		
		260	*****		
0BF4 04		0BF4 261	RTN04	DC XL1'04'	ROUTINE NUMBER
0BF5 00		0BF5 262		DC XL1'00'	NO MANUAL INTERVENTION REQUIRED
0BF6 0D0D		0BF7 263		DC AL2(RTN05)	ROUTINE 05 ADDRESS
		264			
		265	B	PRINT	PRINT THIS TEST HEADING.
0BF8 C0 87 021A		0BFC 266		DC XL1'41'	
0BFC 41		0BFD 267		DC IL1'33'	
0BFD 21		0BFF 268		DC AL2(HD04A)	
0BFE 1977		0C01 269		DC XL2'40A4'	
0C00 40A4		270			
		271	B	PRINT	
0C02 C0 87 021A		0C06 272		DC XL1'05'	
0C06 05		0C07 273		DC IL1'26'	
0C07 1A		0C09 274		DC AL2(HD04B)	
0C08 1991		275			
		276	B	INITL	INITIALIZE THE 3741
0C0A C0 87 131D		277			
		278	E	QUES	TEST FOR SSW10 ON.
0C0E C0 87 13C3		279	HPL	X'3C',X'3C'	HALT --FF- IF ON.
0C12 F0 3C 3C		280			
		281	SIO	X'00',X'41'	ISSUE A READ CALL.
0C15 F3 41 00		282	TIO	BUSY,X'42'	BRANCH IF 3741 BECOMES BUSY.
0C18 C1 42 1352		283	SNS	SNS4A,X'43'	SENSE I/O TRANS LINES FOR -FD00--.
0C1C 30 43 0CBF		284			
		285	CLC	SNS4A(2),SNS4A-2	READ CALL DRIVER ACTIVATE ?
0C20 0D 01 0CBF 0CB8		286	JNE	ER4A	BRANCH IF NOT.
0C26 F2 01 54		287			
		288	SIO	X'08',X'40'	RESET READ CALL DRIVER.
0C29 F3 40 08		289	SNS	SNS4A,X'43'	SENSE I/O TRANS LINES FOR -F900--.
0C2C 30 43 0CB3		290			
		291	CLC	SNS4A(2),SNS4A-2	DID TRANS LINES GET RESET ?
0C30 0D 01 0CB3 0CB1		292	JNE	ER4A	JUMP IF NOT.
0C36 F2 01 68		293			
		294	SIO	X'00',X'42'	ISSUE A WRITE CALL.
0C39 F3 42 00		295	SNS	SNS4C,X'43'	SENSE I/O TRANS LINES FOR -FF00--.
0C3C 30 43 0CD7		296			
		297	CLC	SNS4C(2),SNS4C-2	WRITE CALL DRIVER ACTIVATE ?
0C40 0D 01 0CD7 0CDE		298	JNE	ER4C	BRANCH IF NOT.
0C46 F2 01 7C		299			
		300	SIO	X'08',X'40'	RESET WRITE CALL DRIVER.
0C49 F3 40 08		301	SNS	SNS4A,X'43'	SENSE I/O TRANS LINES FOR -F900--.
0C4C 30 43 0CB3		302			
		303	CLC	SNS4A(2),SNS4A-2	DID TRANS LINES GET RESET ?
0C50 0D 01 0CB3 0CB1		304	JNE	ER4A	JUMP IF NOT.
0C56 F2 01 48		305			
		306	LA	SNS4E,XR1	SET UP TO DO INDIRECT SENSE.
0C59 C2 01 0CFB		307	SIO	X'F8',X'43'	DO A CONTROL 1 TO ACT. SELECT LINES.
0C5D F3 43 F8		308	SNS	0(XR1),X'43'	SENSE TRANS LINES FOR -F9F8--.
0C60 70 43 00		309			
		310	CLC	SNS4E(2),SNS4E-2	I/O SELECT LINES ACTIVATE ?
0C63 0D 01 0CFB 0CF9		311	JNE	ER4E	BRANCH IF NOT.
0C69 F2 01 7D		312			
		313	SNS	SNS4A,X'43'	SENSE I/O TRANS LINES FOR -F900--.
0C6C 30 43 0CB3		314			
		315	CLC	SNS4A(2),SNS4A-2	DID TRANS LINES GET RESET ?
0C70 0D 01 0CB3 0CB1		316	JNE	ER4A	JUMP IF NOT.
0C76 F2 01 28		317			
		318	B	LINK	RETURN TO DCP.
0C79 C0 87 0216		319			
		320	*	ROUTINE 04 ERROR MESSAGES *	

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
		321			
0C7D C0 87 021A		322	ER4A	B PRINT	PRINT READ DRIVER CHECK.
0C81 C2		0C81 323		DC XL1'C2'	
0C82 12		0C82 324		DC IL1'18'	
0C83 1A15		0C84 325		DC AL2(RDRIV)	
0C85 4024		0C86 326		DC XL2'4024'	
		327			
		328	B	FRFOR	DUMP I/O TRANSFER LINES.
0C87 C0 87 155B		0C88 329		DC XL1'03'	
0C88 03		0C8D 330		DC XL2'FD00'	-EXPECTED.
0C8C FD00		0C8F 331	SNS4A	DC XL2'0900'	-ACTUAL.
0C8E 0000		0C90 332		DC XL1'FF'	
0C90 FF		333	B	MAPS	POINT TO MAP CHART.
0C91 C0 87 179C		0C96 334		DC XL2'9231'	-PAGE 923, ENTRY 1.
0C95 9231		335	B	HALT	ERROR HALT -24--.
0C97 C0 87 0222		0C9C 336		DC XL2'4024'	
0C9E 4024		337	B	LINK	RETURN TO DCP.
0C9D C0 87 0216		338			
		339	ER4A	B PRINT	PRINT TRL'S NOT RESET.
0CA1 C0 87 021A		0CA5 340		DC XL1'C2'	
0CA5 C2		0CA6 341		DC IL1'29'	
0CA6 1D		0CAB 342		DC AL2(UNSET)	
0CA7 19D2		0C 343		DC XL2'4027'	
0CA9 4027		344			
		345	B	ERROR	DUMP TRANSFER LINES.
0CAB C0 87 155B		0CAF 346		DC XL1'03'	
0CAF 03		0CB1 347		DC XL2'F900'	-EXPECTED.
0CB0 F900		0CB3 348	SNS4A	DC XL2'0000'	-ACTUAL.
0CB2 0000		0CBA 349		DC XL1'FF'	
0CBA FF		350	B	MAPS	POINT TO MAP CHART.
0CB5 C0 87 139C		0CBA 351		DC XL2'9242'	-PAGE 924, ENTRY 2.
0CB9 9242		352	B	HALT	ERROR HALT -27--.
0CB8 C0 87 0222		0CC0 353		DC XL2'4027'	
0CBF 4027		354	B	LINK	RETURN TO DCP.
0CC1 C0 87 0216		355			
		356	ERAC	B PRINT	PRINT WRITE DRIVER CHECK.
0CC8 C0 87 021A		0CC9 357		DC XL1'C2'	
0CC9 C2		0CCA 358		DC IL1'19'	
0CCA 13		0CCB 359		DC AL2(WDRIV)	
0CCB 1A03		0CCE 360		DC XL2'4025'	
0CCD 4025		361			
		362	B	ERROR	DUMP TRANSFER LINES.
0CCF C0 87 155B		0CD3 363		DC XL1'03'	
0CD3 03		0CD5 364		DC XL2'FF00'	-EXPECTED.
0CDA FF00		0CD7 365	SNS4C	DC XL2'0000'	-ACTUAL.
0CD6 0000		0CDB 366		DC XL1'FF'	
0CDB FF		367	B	MAPS	POINT TO MAP CHART.
0CD9 C0 87 139C		0CDE 368		DC XL2'9232'	-PAGE 923, ENTRY 2.
0CDD 9232		369	B	HALT	ERROR HALT -25--.
0CDF C0 87 0222		0CEA 370		DC XL2'4025'	
0CE3 4025		371	B	LINK	RETURN TO DCP.
0CE5 C0 87 0216		372			
		373	ER4E	B PRINT	PRINT I/O SELECT CHECK.
0CE9 C0 87 021A		0CED 374		DC XL1'C2'	
0CED C2		0CEE 375		DC IL1'17'	
0CEE 11		0CF0 376		DC AL2(IOSLY)	
0CEF 1A26		0CF2 377		DC XL2'4026'	
0CF1 4026		378			
		379	B	ERROR	DUMP TRANSFER LINES.
0CF3 C0 87 155B		0CF7 380		DC XL1'03'	
0CF7 03		0CF9 381		DC XL2'F9F8'	-EXPECTED.
0CF8 F9F8		0CFB 382	SNS4E	DC XL2'0000'	-ACTUAL.
0CFA 0000		0CFC 383		DC XL1'FF'	
0CFC FF		384	B	MAPS	POINT TO MAP CHART.
0CFD C0 87 139C		0D01 385		DC XL2'9241'	-PAGE 924, ENTRY 1.
0D01 9241		386	B	HALT	ERROR HALT -26--.
0D03 C0 87 0222		0D08 387		DC XL2'4026'	
0D07 4026		388	B	LINK	RETURN TO DCP.
0D09 C0 87 0216					

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	389	*****	
	390	* RTN05 *	
	391	*****	
	392	*	
	393	* ROUTINE C5	EOT SIGNAL IS GENERATED TO TEST I/O
	394	*	DISCONNECT. THE FUNCTION REGISTER
	395	*	IS SET FOR 6 USEC RESET OF DISCONNECT.
	396	*	
	397	*****	
OD0D 05	OD0D	398 RTN05 DC	XL1'05' ROUTINE NUMBER
OD0E 00	OD0E	399 DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
OD0F 0DF1	OD10	400 DC	AL2(RTN06) ROUTINE 06 ADDRESS
		401	
OD11 C0 E7 021A		402 B	PRINT PRINT DISCONNECT TEST HEADING.
OD1E 45	OD15	403 DC	XL1'45'
OD16 24	OD16	404 DC	IL1'36'
OD17 15B5	OD18	405 DC	AL2(HD05)
OD19 40A5	OD1A	406 DC	XL2'40A5'
		407	
OD1B C0 E7 131D		408 B	INITL INITIALIZE THE 3741
		409	
OD1F C0 E7 13C3		410 B	QUES TEST FOR SSW 10.
OD23 F0 3C 3C		411 HPL	X'3C',X'3C' HALT -FF- IF ON.
		412	
OD26 F3 41 05		413 SIO	X'C5',X'41' ISSUE READ CALL WITH RESET & ENABLE.
OD29 F3 43 02		414 SIO	X'02',X'43' DD CONTROL 1 TO GENERATE EOT.
OD2C 30 45 0DDF		415 SNS	SNSSA,X'45' SENSE DIAGNOSTIC BYTE FOR -0800-.
OD30 30 42 0DDA		416 SNS	SNSSB,X'42' SENSE STATUS/LCR FOR -E100-.
OD34 30 43 0DDE		417 SNS	SNSSC,X'43' SENSE I/O TRANS LINES FOR -F902-.
		418	
OD38 3C 00 0DDF		419 MVI	SNSSA,X'00' CLEAR THE DATA TRANS REG.
OD3C 3C 00 0DDA		420 MVI	SNSSB,X'00' CLEAR THE LENGTH COUNT REG.
		421	
OD40 0D 01 0DDF 0DDD		422 CLC	SNSSA(2),SNSSA-2 DIAGNOSTIC BYTE AS EXPECTED ?
OD46 F2 01 60		423 JNE	ER05 BRANCH IF NOT.
OD49 0D 01 0DDA 0DD8		424 CLC	SNSSB(2),SNSSB-2 STATUS BYTE AS EXPECTED ?
OD4F F2 01 57		425 JNE	ER05 BRANCH IF NOT.
OD52 0D 01 0DD5 0DD3		426 CLC	SNSSC(2),SNSSC-2 I/O TRANSFER LINES AS EXPECTED ?
OD58 F2 01 4E		427 JNE	ER05 BRANCH IF NOT.
		428	
OD5E 31 41 16BB		429 LIO	H0082,X'41' SET FNCT REG TO DIAG MODE. 6USEC RST
OD5F F3 40 0D		430 SIO	X'0D',X'40' DD GENERAL 3741 RESET.
OD62 30 42 0D97		431 SNS	SNSSA,X'42' SENSE STATUS FOR -8100-.
OD6E 30 45 0D92		432 SNS	SNSSD,X'45' SENSE DIAGNOSTIC BYTE FOR -0000-.
		433	
OD6A 0D 01 0D92 0D90		434 CLC	SNSSD(2),SNSSD-2 DIAGNOSTIC BYTE AS EXPECTED ?
OD70 F2 01 0D		435 JNE	ER05A BRANCH IF NOT.
OD73 0D 01 0D97 0D95		436 CLC	SNSSA(2),SNSSA-2 STATUS BYTE AS EXPECTED ?
OD75 F2 01 04		437 JNE	ER05A BRANCH IF NOT.
		438	
OD7C C0 87 0216		439 B	LINK RETURN TO DCP.
		440	
		441	* ROUTINE 05 ERROR MESSAGE *
		442	
OD80 C0 87 021A		443 ER05A B	PRINT PRINT SENSE RESET CHECK.
OD84 C2	OD84	444 DC	XL1'C2'
OD85 12	OD85	445 DC	IL1'18'
OD86 1AE2	OD87	446 DC	AL2(10DIS)
OD88 4029	OD89	447 DC	XL2'4029'
		448	
OD8A C0 87 155B		449 B	ERFOR DUMP THESE REGISTER-
OD8E 05	OD8E	450 DC	XL1'05' DIAGNOSTIC BYTE/DATA TRANS REG.
OD8F 0000	OD90	451 DC	XL2'0000' -EXPECTED.
OD91 0000	OD92	452 SNSSD DC	XL2'0000' -ACTUAL.
OD93 02	OD93	453 DC	XL1'02' STATUS BYTE/LENGTH COUNT REGISTER.
OD94 8100	OD95	454 DC	XL2'8100' -EXPECTED.
OD96 0000	OD97	455 SNSSA DC	XL2'0000' -ACTUAL.
OD98 FF	OD98	456 DC	XL1'FF'

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	457	B	MAFS POINT TO MAP CHART.
OD99 C0 87 139C			
OD9D 9272	OD9E	458 DC	XL2'9272' -PAGE 927, ENTRY 2.
OD9F C0 87 0222		459 B	HALT ERROR MALT -29-
ODA3 4029	ODA4	460 DC	XL2'4029'
ODA5 C0 87 0216		461 B	LINK RETURN TO DCP.
		462	
ODA9 0C 01 1649 0DDF		463 ER05 MVC	TEST-4(2),SNSSA STORE DIAG BYTE/DATA TRANS REG.
ODAF 0C 01 1646 0DDA		464 MVC	TEST-2(2),SNSSB STORE STATUS BYTE/LENGTH COUNT REG.
ODB5 0C 01 164D 0DD5		465 MVC	TEST(2),SNSSC STORE I/O TRANSFER LINES.
		466	
ODBB C0 87 021A		467 B	PRINT PRINT EOT CHECK.
ODBF C2	ODBF	468 DC	XL1'C2'
ODC0 13	ODC0	469 DC	IL1'19'
ODC1 1B30	ODC2	470 DC	AL2(EOT)
ODC3 4022	ODC4	471 DC	XL2'4028'
		472	
ODC5 C0 87 13ED		473 B	CKPAT CHECK TO SEE IF DATA MATCHES PATTERN
ODC9 1656	ODCA	474 DC	AL2(EXPY) -TABLE ADDRESS OF PATTERNS.
ODCB 1687	ODCC	475 DC	AL2(FRMS05) -TABLE ADDRESS OF MESSAGES.
		476	
ODCD C0 87 155B		477 B	ERFOR DUMP THESE REGISTERS-
ODD1 03	ODD1	478 DC	XL1'03' I/O TRANSFER LINES.
ODD2 F902	ODD3	479 DC	XL2'F902' -EXPECTED.
ODD4 0000	ODD5	480 SNSSC DC	XL2'0000' -ACTUAL.
ODD6 02	ODD6	481 DC	XL1'02' STATUS BYTE/LENGTH COUNT REG.
ODD7 E100	ODD8	482 DC	XL2'E100' -EXPECTED.
ODD9 0000	ODDA	483 SNSSB DC	XL2'0000' -ACTUAL.
ODDB 05	ODDB	484 DC	XL1'05' DIAGNOSTIC BYTE/DATA TRANS REG.
ODDD 0800	ODDD	485 DC	XL2'0800' -EXPECTED.
ODDE 0000	ODDF	486 SNSSA DC	XL2'0000' -ACTUAL.
ODE0 FF	ODE0	487 DC	XL1'FF'
ODE1 C0 87 139C		488 B	MAFS POINT TO MAP CHART.
ODE5 9271	ODE6	489 DC	XL2'9271' -PAGE 927, ENTRY 1.
ODE7 C0 87 0222		490 B	HALT ERROR MALT -28-
ODE8 4028	ODEC	491 DC	XL2'4028'
ODED C0 87 0216		492 B	LINK RETURN TO DCP.
		493	
		494	
		495	*****
		496	* RTN06 *
		497	*****
		498	*
		499	* ROUTINE C6 GENERATE EOT USING I/O 3 SELECT
		500	* WITH A SIO READ CALL. *
		501	*
		502	*****
ODF1 06	ODF1	503 RTN06 DC	XL1'06' ROUTINE NUMBER
ODF2 00	ODF2	504 DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
ODF3 0E4A	ODFA	505 DC	AL2(RTN07) ROUTINE 07 ADDRESS
		506	
ODF5 C0 87 021A		507 B	PRINT PRINT EOT HEADING.
ODF9 45	ODF9	508 DC	XL1'45'
ODFA 31	ODFA	509 DC	IL1'49'
ODFB 1B1D	ODFC	510 DC	AL2(HD06)
ODFD 40A6	ODFE	511 DC	XL2'40A6'
		512	
ODFF C0 87 131D		513 B	INITL INITIALIZE THE 3741
		514	
OE03 C0 87 13C3		515 B	QUES TEST FOR SSW 10.
OE07 F3 3C 3C		516 HPL	X'3C',X'3C' HALT -FF- IF ON.
		517	
OE0A F3 41 05		518 SIO	X'C5',X'41' ISSUE A SIO READ CALL.
OE0D F3 43 04		519 SIO	X'04',X'43' ISSUE A CONTROL 1 - I/O SELECT 3.
OE10 30 45 0E38		520 SNS	SNSSA,X'45' SENSE DIAG-DTR FOR A -0800-.
OE14 31 41 16BB		521 LIO	H0082,X'41' DD 6 USEC RESET WITH FNCT REG.
OE18 3C 00 0E38		522 MVI	SNSSA,X'00' CLEAR DATA TRANS REGISTER.
		523	
OE1C 0D 01 0E38 0E36		524 CLC	SNSSA(2),SNSSA-2 DIAGNOSTIC BYTE AS EXPECTED ?

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

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ERR LOC OBJECT CODE     ADDR STMT SOURCE STATEMENT

OE22 C0 81 0216        525      BE  LINK
                        526
                        527 * ROUTINE 06 ERROR MESSAGE *
                        528
OE26 C0 87 021A        529      B   PRINT
OE2A C2                  530      DC  XL1'02'
OE2E 0A                  531      DC  IL1'10'
OE2C 1AEC                532      DC  AL2(ECTACT)
OE2E 402A                533      DC  XL2'402A'
                        534
OE30 C0 87 155B        535      B   ERROR
OE34 05                  536      DC  XL1'05'
OE3E 0800                537      LC  XL2'0800'
OE37 0000                538      DC  XL2'0000'
OE39 FF                  539      DC  XL1'FF'
OE3A C0 87 139C        540      B   MAFS
OE3E 9311                541      DC  XL2'9311'
OE40 C0 87 0222        542      B   HALT
OE44 402A                543      DC  XL2'402A'
OE46 C0 87 0216        544      B   LINK
                        545
                        546
                        547 *****
                        548 * RTN07 *
                        549 *****
                        550 *
                        551 * ROUTINE C7 I/O TRANSFER LINES 1 & 3 ARE
                        552 * CHECKED FOR RESETTING.
                        553 *
                        554 *****
OE4A 07                  555 RTN07 DC  XL1'07'
OE4E 00                  556      DC  XL1'00'
OE4C 0EDD                557      DC  AL2(RTN08)
                        558
OE4E C0 87 021A        559      B   PRINT
OE52 45                  560      DC  XL1'45'
OE53 29                  561      DC  IL1'41'
OE54 1A83                562      DC  AL2(MD07)
OE56 40A7                563      DC  XL2'40A7'
                        564
OE5E C0 87 131D        565      B   INITL
                        566
OE5C C0 87 13C3        567      B   QUES
OE60 F0 3C 3C          568      MPL X'3C',X'3C'
                        569
OE63 31 41 16BD        570      LIO H0188,X'41'
OE67 31 45 1698        571      LIO H0001,X'45'
OE6B 31 45 1699        572      LIO H0000,X'45'
OE6F F3 43 10          573      SID X'10',X'43'
OE72 30 43 0ECB        574      SNS SNS77,X'43'
OE76 30 43 0ECB        575      SNS SNS77,X'43'
                        576
OE7A 0D 01 0ECB 0EC9  577      CLC SNS77(2),SNS77-2
OE80 F2 01 23          578      JNE ER7A
                        579
OE83 31 45 16A1        580      LIO H0004,X'45'
OE87 31 45 1699        581      LIO H0000,X'45'
OE8E F3 43 10          582      SID X'10',X'43'
OE8E 30 43 0ECB        583      SNS SNS77,X'43'
OE92 30 43 0ECB        584      SNS SNS77,X'43'
                        585
OE96 0D 01 0ECB 0EC9  586      CLC SNS77(2),SNS77-2
OE9C F2 01 12          587      JNE ER7B
                        588
OE9F F3 40 0D          589      SID X'0D',X'40'
                        590
OE A2 C0 87 0216        591      B   LINK
                        592
RETURN TO DCP IF OK.
PRINT EOT CHECK.
DUMP DIAGNOSTIC/DATA TRANS REG.
-EXPECTED.
-ACTUAL.
POINT TO MAP CHART.
-PAGE 931. ENTRY 1.
ERROR HALT -2A-.
RETURN TO DCP.
ROUTINE NUMBER
NO MANUAL INTERVENTION REQUIRED
ROUTINE 08 ADDRESS
PRINT TRL'S 1, 3 RESET TEST.
INITIALIZE THE 3741
TEST FOR SSW 10.
HALT -FF- IF ON.
SET FNCT REG TO LATCH TRL 1,3.
LOAD DATA TRANS REG WITH -01-.
CLEAR DATA TRANS REG.
ISSUE CONTROL 1 START I/O.
DO ONE DUMMY SENSE TO STALL.
SENSE TRANS LINES FOR -F900-.
DID TRANS LINE 1 RESET ?
BRANCH IF NOT.
LOAD DATA TRANS REG WITH -04-.
CLEAR DATA TRANS REG.
ISSUE SID CONTROL 1 TO RESET TPL 3.
DO DUMMY SENSE TO STALL.
SENSE TRANS LINES FOR -F900-.
DID TRANS LINE 3 RESET ?
BRANCH IF NOT.
DO GENERAL 3741 RESET.
RETURN TO DCP.

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ERR LOC OBJECT CODE     ADDR STMT SOURCE STATEMENT

OEA6 3C F1 1A96        593 * ROUTINE 07 ERROR MESSAGES *
OEA8 3B 01 0ED2        594
OEA8 3B 01 0ED2        595 ER7A MVI ONCTS-13,X'F1'
OEA8 F2 87 C8          596      SBF MP07,X'01'
OEA8 F2 87 C8          597      J   3+11
OEB1 3C F3 1A96        598 ER7B MVI ONCTS-13,X'F3'
OEB5 3A 01 0ED2        599      SBN MPC7,X'01'
OEB9 C0 87 021A        600      B   PRINT
OEBD C2                  601      DC  XL1'02'
OEBE 20                  602      DC  IL1'32'
OEBF 1AA5                603      DC  AL2(ONCTS)
OEC1 402E                604      DC  XL2'402E'
                        605
                        606
OEC3 C0 87 155B        607      B   ERROR
OEC7 03                  608      DC  XL1'03'
OECB F900                609      DC  XL2'F900'
OECB 0000                610      DC  XL2'0000'
OECF FF                  611      DC  XL1'FF'
OED0 C0 87 139C        612      B   MAFS
OED1 9312                613      DC  XL2'9312'
OED3 C0 87 0222        614      B   HALT
OED7 402E                615      DC  XL2'402E'
OED9 C0 87 0216        616      B   LINK
                        617
                        618 *****
                        619 * RTN08 *
                        620 *****
                        621 *
                        622 * ROUTINE C8 I/O TRANSFER LINES 4, 6 & 7 ARE
                        623 * CHECKED FOR RESETTING.
                        624 *
                        625 *****
OEDD 08                  626 RTN08 DC  XL1'08'
OEE0 00                  627      DC  XL1'00'
OEE0 0F9F                628      DC  AL2(RTN09)
                        629
OEE1 C0 87 021A        630      B   PRINT
OEE5 45                  631      DC  XL1'45'
OEE6 2D                  632      DC  IL1'45'
OEE7 1A0D                633      DC  AL2(MD08)
OEE9 40A8                634      DC  XL2'40A8'
                        635
OEEB C0 87 131D        636      B   INITL
                        637
OEEF C0 87 13C3        638      B   QUES
OEF3 F0 3C 3C          639      MPL X'3C',X'3C'
                        640
OEF6 31 41 16BD        641      LIO H0188,X'41'
OEF6 F3 43 10          642      SID X'10',X'43'
OEFD 30 43 0F8D        643      SNS SNS88,X'43'
OF01 F3 43 08          644      SID X'C8',X'43'
OF04 30 43 0F8D        645      SNS SNS88,X'43'
OF08 F3 43 10          646      SID X'10',X'43'
OF0B 30 43 0F8D        647      SNS SNS88,X'43'
OF0F 30 43 0F8D        648      SNS SNS88,X'43'
                        649
OF13 0D 01 0F8D 0F8B  650      CLC SNS88(2),SNS88-2
OF19 F2 01 3D          651      JNE ER8B
                        652
OF1C F3 43 20          653      SID X'20',X'43'
OF1F 30 43 0F8D        654      SNS SNS88,X'43'
OF23 F3 43 10          655      SID X'10',X'43'
OF26 30 43 0F8D        656      SNS SNS88,X'43'
OF2A 30 43 0F8D        657      SNS SNS88,X'43'
                        658
OF2E 0D 01 0F8D 0F8B  659      CLC SNS88(2),SNS88-2
OF34 F2 01 31          660      JNE ER8C
                        661
SET UP FOR TRL 1 RESET CHECK.
SET FOR ENTRY 2 MAP REFERENCE.
SET UP FOR TRL 3 RESET CHECK.
SET FOR ENTRY 3 MAP REFERENCE.
PRINT TRL 1/2 RESET CHECK.
(SAME ID AS RTN08)
DUMP TRANS LINES.
-EXPECTED.
-ACTUAL.
POINT TO MAP CHART.
-PAGE 931. ENTRY 2/3.
ERROR HALT -2E-.
RETURN TO DCP.
ROUTINE NUMBER
NO MANUAL INTERVENTION REQUIRED
ROUTINE 09 ADDRESS
PRINT LATCH RESET OF TRL 4,6,7.
INITIALIZE THE 3741
TEST FOR SSW 10.
HALT -FF- IF ON.
SET FNCT REG TO LATCH TRL 1,2,3.
ISSUE SID CONTROL 1 TO CLEAR LOGIC.
STALL BEFORE DOING THE NEXT SID.
DO CONTROL 1 TO LATCH TRL 4.
STALL BEFORE DOING NEXT SID.
DO SID CONTROL 1 TO RESET TRL'S.
DO DUMMY SENSE TO STALL.
SENSE TRANS LINES FOR -F900-.
DID TRANS LINE 4 GET RESET ?
BRANCH IF NOT.
ISSUE CONTROL 1 TO LATCH TRL 6.
STALL BEFORE DOING NEXT SID.
DO SID CONTROL 1 TO RESET TRL'S.
DO DUMMY SENSE TO STALL.
SENSE TRANS LINES FOR -F900-.
DID TRANS LINES GET RESET ?
BRANCH IF NOT.

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
	661	SIO	X'40',X'43'	DO CONTROL 1 TO LATCH TRL 7.
OF37 F3 43 40	662	SNS	SNS88,X'43'	STALL BEFORE DOING NEXT SIO.
OF3A 30 43 0F8D	663	SIO	X'10',X'43'	DO SIO CONTROL 1 TO RESET TRL'S.
OF3E F3 43 10	664	SNS	SNS88,X'43'	DO DUMMY SENSE TO STALL.
OF41 30 43 0F8D	665	SNS	SNS88,X'43'	SENSE TRANS LINES FOR -F900-.
OF4E 30 43 0F8D	666	SNS	SNS88,X'43'	
	667			
OF49 0D 01 0F8D 0F8B	668	CLC	SNS88(2),SNS88-2	DID TRANS LINE 7 GET RESET ?
OF4F F2 01 21	669	JNE	ER8F	BRANCH IF NOT.
	670			
OF52 F3 40 0D	671	SIO	X'0D',X'40'	DO GENERAL 3741 RESET.
OF5E C0 87 0216	672	B	LINK	RETURN TO DCP.
	673			
	674	* ROUTINE 08 ERROR MESSAGES *		
	675			
OF59 3C 0A 0F8C	676	ERBB	MVI SNS88-1,X'0A'	SET UP EXPECTED TRANS LINES.
OF5D 3C F4 1A96	677	MVI	ONCTS-13,X'F4'	SET UP TRL 4 CHECK.
OF61 3C 14 0F54	678	MVI	MP08,X'14'	SET FOR MAP 4 ENTRY REFERENCE.
OF65 F2 87 13	679	J	PRT88	GO PRINT ERROR.
	680			
OF68 3C F6 1A96	681	ERBD	MVI ONCTS-13,X'F6'	SET UP TRL 6 CHECK.
OF6C 3C 15 0F94	682	MVI	MP08,X'15'	SET FOR MAP 5 ENTRY REFERENCE.
OF70 F2 87 08	683	J	PRT88	PRINT CHECK MESSAGE.
	684			
OF73 3C F7 1A96	685	ERBF	MVI ONCTS-13,X'F7'	SET UP TRL 7 CHECK.
OF77 3C 16 0F54	686	MVI	MP08,X'16'	SET FOR MAP 6 ENTRY REFERENCE.
	687			
OF7B C0 87 021A	688	PRT88	B PRINT	PRINT TRANS LINES DID NOT RESET.
OF7F C2	689	DC	XL1'C2'	
OF80 20	690	DC	IL1'32'	
OF81 1AA3	691	DC	AL2(ONOTS)	
OF83 402E	692	DC	XL2'402E'	
OF85 C0 87 155B	693	B	ERFDR	DUMP TRANS LINES.
OF89 03	694	DC	XL1'03'	-EXPECTED.
OF8A F900	695	DC	XL2'F900'	-ACTUAL.
OF8C 0000	696	DC	XL2'0000'	
OF8E FF	697	DC	XL1'FF'	
OF8F C0 87 139C	698	B	MAFS	POINT TO MAP CHART.
OF93 9200	699	DC	XL2'9300'	-PAGE 931, ENTRY 4,5,OR 6.
OF95 C0 87 0222	700	B	MALT	ERROR MALT -2F--.
OF99 402E	701	DC	XL2'402E'	
OF9B C0 87 0216	702	B	LINK	RETURN TO DCP.
	703			
	704			
	705	*****		
	706	* RTN09 *		
	707	*****		
	708	* ROUTINE C9 TEST ABILITY OF READ & WRITE CALL TO RESET TRANSFER LINES 3 & 4. *		
	709			
	710			
	711			
	712	*****		
OF9F 09	713	RTN09	DC XL1'09'	ROUTINE NUMBER
OFA0 00	714	DC	XL1'00'	NO MANUAL INTERVENTION REQUIRED
OFA1 10E3	715	DC	AL2(RTNOA)	ROUTINE 0A ADDRESS
	716			
OFA3 C0 87 021A	717	B	PRINT	PRINT RESET TEST HEADING.
OFA7 45	718	DC	XL1'45'	
OFAB 38	719	DC	IL1'56'	
OFA9 1B68	720	DC	AL2(MD09)	
OFAB 40A9	721	DC	XL2'40A9'	
	722			
OFAD C0 87 131D	723	B	INITL	INITIALIZE THE 3741
	724			
OFB1 C0 87 13C3	725	B	QUES	TEST FOR SSW 10.
OFB5 F0 3C 3C	726	HPL	X'3C',X'3C'	MALT -FF- IF ON.
	727			
OFB8 31 41 168F	728	LID	H0E82,X'41'	SET FNCT REG FOR EVEN PARITY ETC.

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
OFBC 31 45 16C1	729	LID	H00FF,X'45'	LOAD DATA TRANS REG WITH -FF--.
OFCD 31 45 1699	730	LID	H0000,X'45'	CLEAR DATA TRANS REGISTER.
OFCA 30 43 100D	731	SNS	SNS9A,X'43'	SENSE I/O TRANSFER LINES FOR -F80C--.
	732			
OFCE 0D 01 100D 100E	733	CLC	SNS9A(2),SNS9A-2	TRANSFER LINES AS EXPECTED ?
OFCE F2 01 2A	734	JNE	ER09A	BRANCH IF NOT.
	735			
OFD1 F3 41 00	736	SIO	X'0C',X'41'	ISSUE READ CALL TO RESET TRL 4.
OFD4 30 43 1051	737	SNS	SNS99,X'43'	SENSE TRANS LINES FOR -FC04--.
	738			
OFD8 0D 01 10E1 16C5	739	CLC	SNS99(2),HFC04	TRANSFER LINES AS EXPECTED ?
OFDE F2 01 3E	740	JNE	ER09B	BRANCH IF NOT.
	741			
OFE1 F3 40 08	742	SIO	X'0B',X'40'	DO SIO RESET TO 3741
	743			
OFE4 F3 42 00	744	SIC	X'0C',X'42'	ISSUE WRITE CALL TO RESET TRL 3.
OFE7 30 43 1051	745	SNS	SNS99,X'43'	SENSE TRANS LINES FOR -FE00--.
	746			
OFEB 0D 01 1051 16CE	747	CLC	SNS99(2),HFE00	TRANSFER LINES AS EXPECTED ?
OFF1 F2 01 3D	748	JNE	ER09C	BRANCH IF NOT.
	749			
OFF4 F3 40 0D	750	SIO	X'0D',X'40'	DO GENERAL 3741 RESET.
OFF7 C0 87 0216	751	B	LINK	RETURN TO DCP.
	752			
	753	* ROUTINE 09 ERROR MESSAGES *		
	754			
OFFB C0 87 021A	755	ER09A	B PRINT	PRINT INITIALIZATION CHECK.
OFFF C2	756	DC	XL1'C2'	
1000 12	757	DC	IL1'18'	
1001 1A38	758	DC	AL2(DISCK)	
1003 402F	759	DC	XL2'402F'	
	760			
1005 C0 37 155B	761	B	ERROR	DUMP TRANS LINES.
1009 03	762	DC	XL1'03'	-EXPECTED.
100A F80C	763	DC	XL2'F80C'	-ACTUAL.
100C 0000	764	DC	XL2'0000'	
100E FF	765	DC	XL1'FF'	
100F C0 87 139C	766	B	MAFS	POINT TO MAP CHART.
1013 9331	767	DC	XL2'9331'	-PAGE 933, ENTRY 1.
1015 C0 87 0222	768	B	MALT	ERROR MALT -2F--.
1019 402F	769	DC	XL2'402F'	
101B C0 87 0216	770	B	LINK	RETURN TO DCP.
	771			
101F C0 01 1050 16C9	772	ER09B	MVC SNS99-1(2),MFC04	SET UP FOR READ CHECK.
1025 3C F4 1A96	773	MVI	ONCTS-13,X'F4'	
1029 3B 01 1058	774	SBF	MP09,X'01'	SET MAP ENTRY 2 REFERENCE.
102D C0 87 103F	775	B	*18	
1031 C0 01 1050 16CB	776	ER09C	MVC SNS99-1(2),HFE00	SET UP FOR WRITE CHECK.
1037 3C F3 1A96	777	MVI	ONCTS-13,X'F3'	
103B 3A 01 1058	778	SBN	MP09,X'01'	SET MAP ENTRY 3 REFERENCE.
	779			
103F C0 87 021A	780	B	PRINT	PRINT TRANS LINE X CHECK.
1043 C2	781	DC	XL1'C2'	
1044 20	782	DC	IL1'32'	
1045 1AA3	783	DC	AL2(ONOTS)	
1047 4030	784	DC	XL2'4030'	
	785			
1049 C0 87 155B	786	B	ERROR	DUMP TRANS LINES.
104D 03	787	DC	XL1'03'	-EXPECTED.
104E 0000	788	DC	XL2'0000'	-ACTUAL.
1050 0000	789	DC	XL2'0000'	
1052 FF	790	DC	XL1'FF'	
1053 C0 87 139C	791	B	MAFS	POINT TO MAP CHART.
1057 9332	792	DC	XL2'9332'	-PAGE 933, ENTRY 2/3.
1059 C0 87 0222	793	B	MALT	ERROR MALT -30--.
105D 4030	794	DC	XL2'4030'	
105F C0 87 0216	795	B	LINK	RETURN TO DCP.

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
797 \*\*\*\*\*
798 \* RTNOA \*
799 \*\*\*\*\*
800 \*
801 \* ROUTINE CA TEST RESET OF I/O DISCONNECT LATCH
802 \* WITH I/O TRANSFER LINES 3, 5.
803 \*
804 \*\*\*\*\*
1063 0A 1063 805 RTNOA DC XL1'0A' ROUTINE NUMBER
1064 00 1064 806 DC XL1'00' NO MANUAL INTERVENTION REQUIRED
1065 1115 1066 807 DC AL2(RTNOE) ROUTINE OB ADDRESS
1067 C0 87 021A 808
1068 45 106B 809 B PRINT PRINT DISCONNECT HEADING.
106C 49 106C 810 DC XL1'45'
106D 1BB1 106E 811 DC IL1'73'
106F 40AA 1070 812 DC AL2(HDDA)
813 DC XL2'40AA'
814
815 B INITL INITIALIZE THE 3741
816
817 LIC H0000,X'41' REMOVE 3741 FROM DIAGNOSTIC MODE.
818 SID X'00',X'41' ISSUE A READ CALL TO CAUSE BUSY.
819 TIO SHCBSY,X'42' BRANCH ON BUSY.
820
821 DAMBSY B PRINT PRINT 3741 BUSY CHECK.
822 DC XL1'C2'
823 DC IL1'16'
824 DC AL2(BSY)
825 DC XL2'4035'
826 B HAFS POINT TO MAP CHART.
827 DC XL2'9355' -PAGE 935, ENTRY 5.
828 B HALT ERROR HALT -35-.
829 DC XL2'4035'
830 B LINK RETURN TO DCP.
831
832 SHDBSY SID X'0D',X'4G' DD SID RESET TO CLEAR THE BUSY.
833 TIC DAMBSY,X'42' BRANCH OUT IF STILL BUSY.
834
835 B INITL GO INITIALIZE THE 3741
836
837 B QUES TEST FOR SSW 10.
838 MPL X'3C',X'3C' HALT -FF- IF ON.
839
840 LIO H0E85,X'41' SET FNCT FOR EVEN PARITY. 6 USEC RST
841 LIO H0000,X'45' CLEAR DATA TRANS REGISTER.
842 SID X'00',X'41' ISSUE A READ CALL.
843 SID X'04',X'43' ISSUE START I/O CONTROL 1.
844 LIO H0004,X'45' LOAD DATA TRANS REG WITH -04-.
845 LIO H0000,X'45' CLEAR DATA TRANSFER REGISTER.
846 SNS SNSAA,X'43' SENSE TRANS LINES FOR -F800-.
847
848 CLC SNSAA(2),SNSAA-2 TRANS LINES AS EXPECTED ?
849 JNE EROA BRANCH IF NOT.
850
851 SID X'00',X'41' ISSUE A READ CALL.
852 SID X'04',X'43' DD START I/O CONTROL 1.
853 LIO H0010,X'45' LOAD DATA TRANS REG WITH -10-.
854 LIO H0C00,X'45' CLEAR DATA TRANS REGISTER.
855 SNS SNSAA,X'43' SENSE TRANS LINES FOR -F800-.
856
857 CLC SNSAA(2),SNSAA-2 TRANS LINES AS EXPECTED ?
858 JNE EROA BRANCH IF NOT.
859
860 SID X'0D',X'40' DD GENERAL 3741 RESET.
861 B LINK RETURN TO DCP.
862
863 \* ROUTINE 0A ERROR MESSAGE \*
864

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ERR LCC OBJECT CODE ADDR STMT SOURCE STATEMENT
10F1 C0 87 021A 865 EROA B PRINT PRINT DISCONNECT CHECK.
10F5 C2 10F5 866 DC XL1'C2'
10F6 24 10F6 867 DC IL1'36'
10F7 100D 10F8 868 DC AL2(PSDIS)
10F9 4031 10FA 869 DC XL2'4031'
870
10FB C0 87 155B 871 B ERROR DUMP TRANSFER LINES.
10FF 03 10FF 872 DC XL1'03'
1100 F800 1101 873 DC XL2'F800' -EXPECTED.
1102 000D 1103 874 SNSAA DC XL2'000D' -ACTUAL.
1104 FF 1104 875 DC XL1'FF'
876 B HAFS
877 DC XL2'9351' POINT TO MAP CHART.
110A 877 DC XL2'9351' -PAGE 935, ENTRY 1.
878 B HALT ERROR HALT -31-.
1110 879 DC XL2'4031'
880 B LINK RETURN TO DCP.
881
882 \*\*\*\*\*
883 \* RTNOB \*
884 \*\*\*\*\*
885 \*
886 \* ROUTINE 0B USE I/O TRANSFER LINES 1 & 2 TO
887 \* CAUSE END OF TRANSFER (EOT). \*
888 \*
889 \*\*\*\*\*
1115 0B 1115 890 RTNOB DC XL1'0B' ROUTINE NUMBER
1116 00 1116 891 DC XL1'00' NO MANUAL INTERVENTION REQUIRED
1117 119D 1118 892 DC AL2(RTNOC) ROUTINE OC ADDRESS.
893
1119 C0 87 021A 894 B PRINT PRINT EOT HEADING.
111D 45 111D 895 DC XL1'45'
111E 41 111E 896 DC IL1'65'
111F 16F2 1120 897 DC AL2(HDOB)
1121 40AB 1122 898 DC XL2'40AB'
899
900 B INITL INITIALIZE THE 3741
901
902 B QUES TEST FOR SSW 10.
903 HPL X'3C',X'3C' HALT -FF- IF ON.
904
905 LIO H3C82,X'41' SET FNCT REG FOR 6 USEC RESET.
906 LIO H3C80,X'41' RELOAD THE FUNCTION REGISTER.
907 SID X'01',X'41' ISSUE A WRITE CALL.
908 LIO H0C02,X'45' LOAD DATA TRANS REG WITH -02-.
909 LIO H0C00,X'45' CLEAR DATA TRANS REGISTER.
910 SNS SNSBB,X'45' SENSE DIAGNOSTIC/DATA TRANS -0800-.
911
912 CLC SNSBB(2),SNSBB-2 DIAGNOSTIC/DATA TRANS AS EXPECTED ?
913 JNE EROB BRANCH IF NOT.
914
915 LIO H3C82,X'41' LOAD FUNCTION REG FOR 6 USEC RESET.
916 LIO H3C80,X'41' RELOAD FUNCTION REGISTER.
917 SID X'01',X'41' ISSUE READ CALL.
918 LIO H0001,X'45' LOAD DATA TRANS REG WITH -01-.
919 LIO H0000,X'45' CLEAR DATA TRANS REGISTER.
920 SNS SNSBB,X'45' SENSE DIAG/DATA TRANS FOR -0800-.
921
922 CLC SNSBB(2),SNSBB-2 DIAGNOSTIC/DATA TRANS AS EXPECTED ?
923 JNE EROB BRANCH IF NOT.
924
925 LIO H0C82,X'41' SET FUNCTION REG FOR 6 USEC RESET.
926 SID X'0D',X'40' DD GENERAL 3741 RESET.
927 B LINK RETURN TO DCP.
928
929 \* ROUTINE 0B ERROR MESSAGE \*
930
931 EROB B PRINT PRINT EOT CHECK.
932 DC XL1'C2'

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
117E	13	117E	933	DC	IL1'19'
117F	1830	1180	934	DC	AL2(EOT)
1181	4032	1182	935	DC	XL2'4032'
			936		
1183	C0 87 155B		937	B	ERROR
1187	05	1187	938	DC	XL1'05'
1188	0800	1189	939	DC	XL2'0800'
118A	0000	118B	940	SNSBB	DC XL2'0000'
118C	FF	118C	941	DC	XL1'FF'
118C	C0 87 139C		942	B	MAFS
1191	9352	1192	943	DC	XL2'9352'
1193	C0 87 C222		944	B	HALT
1197	4032	1198	945	DC	XL2'4032'
1199	C0 87 0216		946	B	LINK
			947		
			948	*****	
			949	* RTNOC *	
			950	*****	
			951	*	
			952	* ROUTINE OC	TEST EVEN PARITY AND WRAP VARIOUS PATTERNS *
			953	*	TO THE I/O TRANSFER LINES. *
			954	*	*
			955	*****	
119D	OC	119D	956	RTNOC	DC XL1'0C'
119E	00	119E	957	DC	XL1'00'
119F	FFFF	11A0	958	DC	XL2'FFFF'
			959		
11A1	C0 87 021A		960	B	PRINT
11A5	45	11A5	961	DC	XL1'45'
11A6	37	11A6	962	DC	IL1'55'
11A7	1C29	11A8	963	DC	AL2(HDOC)
11A9	40AC	11AA	964	DC	XL2'40AC'
			965		
11AB	C0 87 131D		966	B	INITL
			967		
11AF	C0 87 13C3		968	B	QUES
11B3	F0 3C 3C		969	HPL	X'3C',X'3C'
			970		
11B6	31 45 16B5		971	LIC	H002C,X'45'
11BA	30 43 164D		972	SNS	TEST,X'43'
11BE	31 41 16A9		973	LIO	H0880,X'41'
11C2	31 45 16B5		974	LIO	H002C,X'45'
11C6	30 43 164E		975	SNS	TEST-2,X'43'
			976		
11CA	39 01 164C		977	TBF	TEST-1,X'01'
11CE	F2 90 CE		978	JF	PARITY
			979		
11D1	38 01 164A		980	TBN	TEST-3,X'01'
11D5	F2 90 C7		981	JF	PARITY
			982		
11D8	31 41 16A7		983	LIO	H0C80,X'41'
11DC	31 45 1699		984	LIO	H0000,X'45'
11E0	31 41 16AB		985	LIC	H0190,X'41'
11E4	F3 43 10		986	SIO	X'10',X'43'
11E7	31 45 16A1		987	LIO	H0004,X'45'
11EB	31 45 1699		988	LIC	H0000,X'45'
11EF	30 43 1656		989	SNS	SNS0C,X'43'
			990		
11F3	3C 06 1654		991	MVI	SNS0C-2,X'06'
11F7	3D 06 1656		992	CLI	SNS0C,X'06'
11FB	F2 01 BB		993	JNE	EROC
			994		
11FE	31 41 16AD		995	LIO	H0180,X'41'
1202	30 43 1656		996	SNS	SNS0C,X'43'
			997		
1206	3C 00 1654		998	MVI	SNS0C-2,X'00'
120A	3D 00 1656		999	CLI	SNS0C,X'00'
120E	F2 01 AB	1000	JNE	EROC	

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			1001		
1211	31 41 16AF		1002	LIO	H01A0,X'41'
1215	31 45 16CC		1003	LIO	H0008,X'45'
1219	31 45 1699		1004	LIO	H0C00,X'45'
121D	30 43 1656		1005	SNS	SNS0C,X'43'
			1006		
1221	3C 0A 1654		1007	MVI	SNS0C-2,X'0A'
122E	3D 0A 1656		1008	CLI	SNS0C,X'0A'
1229	F2 01 8D		1009	JNE	ERCC
			1010		
122C	31 41 16AD		1011	LIO	H0180,X'41'
1230	30 43 1656		1012	SNS	SNS0C,X'43'
			1013		
1234	3C 00 1654		1014	MVI	SNS0C-2,X'00'
1238	3D 00 1656		1015	CLI	SNS0C,X'00'
123C	F2 01 7A		1016	JNE	EROC
			1017		
123F	31 41 16AD		1018	LIO	H0180,X'41'
1243	31 45 16A5		1019	LIO	H0020,X'45'
1247	31 45 1699		1020	LIO	H0C00,X'45'
124E	30 43 1656		1021	SNS	SNS0C,X'43'
			1022		
124F	3C 22 1654		1023	MVI	SNS0C-2,X'22'
1253	3D 22 1656		1024	CLI	SNS0C,X'22'
1257	F2 01 5F		1025	JNE	EROC
			1026		
125A	31 41 16A7		1027	LIO	H0C80,X'41'
125E	30 43 1656		1028	SNS	SNS0C,X'43'
			1029		
1262	3C 00 1654		1030	MVI	SNS0C-2,X'00'
1266	3D 00 1656		1031	CLI	SNS0C,X'00'
126A	F2 01 4C		1032	JNE	ERCC
			1033		
126D	31 41 16AD		1034	LIO	H0180,X'41'
1271	31 45 16B1		1035	LIO	H0040,X'45'
1275	31 45 1699		1036	LIO	H0000,X'45'
1279	30 43 1656		1037	SNS	SNS0C,X'43'
			1038		
127D	3C 42 1654		1039	MVI	SNS0C-2,X'42'
1281	3D 42 1656		1040	CLI	SNS0C,X'42'
1285	F2 01 31		1041	JNE	EROC
			1042		
1288	31 41 16A7		1043	LIO	H0080,X'41'
128C	30 43 1656		1044	SNS	SNS0C,X'43'
			1045		
1290	3C 00 1654		1046	MVI	SNS0C-2,X'00'
1294	3D 00 1656		1047	CLI	SNS0C,X'00'
1298	F2 01 1E		1048	JNE	ERCC
			1049		
1298	C0 87 0216		1050	B	LINK
			1051		
			1052	* ROUTINE OC ERROR MESSAGES *	
			1053		
129F	C0 87 021A		1054	PARITY B	PRINT
12A3	C2		12A3 1055	DC	XL1'C2'
12A4	0D		12A4 1056	DC	IL1'13'
12A5	1A3B		12A5 1057	DC	AL2(PRCK)
12A7	4033		12A7 1058	DC	XL2'4033'
12A9	C0 87 139C		12A9 1059	B	MAFS
12AD	9353		12AD 1060	DC	XL2'9353'
12AF	C0 87 0222		12AF 1061	B	HALT
12B3	4033		12B3 1062	DC	XL2'4033'
12B5	C0 87 0216		12B5 1063	B	LINK
			1064		
12B9	C0 87 021A		1065	EROC	B
12BD	C2		12BD 1066	DC	XL1'C2'
12BE	1E		12BE 1067	DC	IL1'30'
12BF	19F0		12BF 1068	DC	AL2(STRC)



4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
12C1 4034 12C2 1069 DC XL2\*4034\*  
12C3 0C 11 1D39 17EB 1070 MVC PRT-47(18).NCD3  
12C9 C0 87 1377 1071 B EPFNT2 PRINT TRANS LINE HEADING.  
12C0 0C 09 1034 1840 1072 MVC PRT-52(10).EB1  
12D3 C0 87 136C 1073 B EPFNT1 PRINT EBI HEADING.  
12D7 0C 0E 1D37 182C 1074 MVC PRT-49(15).BITS  
12DD C0 87 1377 1075 B EPFNT2 PRINT BIT LABELS.  
12E1 C2 02 165E 1076 LA W0RK,XR2 SET UP OUTPUT ADDRESSES.  
12E5 C2 01 1D37 1077 LA PRT-49,XR1  
12E9 0C 01 1439 1654 1078 MVC XPT(2).SNS0C-2 STORE EXPECTED BYTES.  
12EF 0C 01 1438 1656 1079 MVC ACT(2).SNS0C STORE ACTUAL BYTES.  
12F5 C0 87 14DE 1080 B BITSNF CALCULATE STATUS OF ACTUAL.  
12F9 143B 12FA 1081 DC AL2(ACT)  
12FB C0 87 136C 1082 B EPFNT1 PRINT THIS STATUS.  
12FF 0C 0A 1D24 17A7 1083 MVC PRT-68(11).ERS  
13C5 C0 87 143C 1084 B CMFARE CALCULATE ERROR BITS.  
1309 C0 87 1377 1085 B EPFNT2 PRINT THESE BITS.  
1300 C0 87 139C 1086 B MAPS POINT TO MAP CHART.  
1311 9354 1312 1087 DC XL2\*9354\* -PAGE 935. ENTRY 4.  
1313 C0 87 0222 1088 B HALT ERROR HALT -34-.  
1317 4034 1318 1089 DC XL2\*4034\*  
1319 C0 87 0216 1090 B LINK RETURN TO DCP.  
1091  
1092 \*\*\*\*\*  
1093 \* INITL \*  
1094 \*\*\*\*\* THIS SUBROUTINE INITIALIZES THE 3741  
1095 \* BEFORE A TEST ROUTINE IS EXECUTED.  
1096 \*  
1097 \*\*\*\*\*  
1098 INITL ST INTL+3.ARR SAVE RETURN ADDRESS.  
1099 LIO H0C80,X\*41\* SET FUNCTION REG TO DIAGNOSTIC MODE  
1100 LIO H0000,X\*42\* ZERO LENGTH COUNT REGISTER.  
1101 LIO H0C00,X\*45\* ZERO DATA TRANSFER REGISTER.  
1102 SID X\*0D\*,X\*40\* DO GENERAL SID RESET TO 3741  
1103 TIO NTFDY,X\*40\* MAKE SURE 3741 IS READY BEFORE TEST.  
1104 INTL B \*-\*  
1105  
1106 \*\*\*\*\*  
1107 \* TIDERS \*  
1108 \*\*\*\*\* SUBROUTINE PRINTS OUT TIO ERRORS.  
1109 \*  
1110 \*\*\*\*\*  
1111 NTRDY B PRINT  
1112 DC XL1\*C2\* PRINT 3741 IS NOT READY.  
1113 DC IL1\*18\*  
1114 DC AL2(NCRDY)  
1115 DC XL2\*403E\*  
1116 B MAPS POINT TO MAP CHART.  
1117 DC XL2\*9071\* -PAGE 907. ENTRY 1.  
1118 B HALT ERROR HA/T -3E-.  
1119 DC XL2\*403E\*  
1120 B LINK RETURN TO DCP.  
1121  
1122 BUSY B PRINT  
1123 DC XL1\*C2\* PRINT 3741 IS BUSY.  
1124 DC IL1\*13\*  
1125 DC AL2(BISY)  
1126 DC XL2\*403F\*  
1127 B MAPS POINT TO MAP CHART.  
1128 DC XL2\*9522\* -PAGE 952. ENTRY 2.  
1129 B HALT ERROR HALT -3F-.  
1130 DC XL2\*403F\*  
1131 B LINK RETURN TO DCP.  
1132  
1133 \*\*\*\*\*  
1134 \* XPRNTX \*  
1135 \*\*\*\*\* SUBROUTINE SETS UP ERROR PRINTING.  
1136 \*

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
1137 \*\*\*\*\*  
1138 EPRNT1 ST PRT+3.ARR STORE RETURN ADDRESS.  
1139 MVI LINE,X\*81\* SET UP TO SPACE 1 LINE.  
1140 J PRNT  
1141 EPRNT2 ST PRT+3.ARR STORE RETURN ADDRESS.  
1142 MVI LINE,X\*82\* SET UP TO SPACE 2 LINES.  
1143 J PRNT  
1144 EPRNT6 ST PRT+3.ARR STORE RETURN ADDRESS.  
1145 MVI LINE,X\*86\* SET UP TO SPACE 6 LINES.  
1146  
1147 PRNT B PRINT  
1148 LINE DC XL1\*00\* PRINT THE ERROR MESSAGE IN 'PRT'.  
1149 CC IL1\*91\*  
1150 DC AL2(PRT)  
1151 MVI PRT(51).PRT+1 CLEAR ERROR MESSAGE AREA.  
1152 PRNT B \*-\* RETURN TO ROUTINE.  
1153  
1154 \*\*\*\*\*  
1155 \* MAPS \* THE MAP CHART REFERENCE IS PRINTED. CALL  
1156 \*\*\*\*\* SUBROUTINE BY -  
1157 \*  
1158 \*  
1159 \* B MAPS  
1160 \* DC XL2\*PAGE NUMBER AND ENTRY NUMBER\*  
1161 \*  
1162 \*\*\*\*\*  
1163 MAPS ST TEMP.ARR STORE ARR.  
1164 L TEMP,XR1 LOAD XR1 WITH ARR ADDRESS.  
1165 MZX MAPSS-11.0(.XR1) STORE HUNDREDS DIGIT OF PAGE #.  
1166 MNN MAPSS-10.0(.XR1) STORE TENS DIGIT OF PAGE #.  
1167 MNZ MAPSS-9.1(.XR1) STORE UNITS DIGIT OF PAGE #.  
1168 MNN MAPSS-1.1(.XR1) STORE ENTRY DIGIT.  
1169 B PRINT PRINT GO TO MAPS.  
1170 DC XL1\*86\*  
1171 DC IL1\*34\*  
1172 DC AL2(MAPSS)  
1173 B 2(.XR1) RETURN TO ROUTINE.  
1174  
1175 \*\*\*\*\*  
1176 \* QUES \*  
1177 \*\*\*\*\* SUBROUTINE DETERMINES IF SSW 10 IS ON.  
1178 \*  
1179 \*\*\*\*\*  
1180 QUES ST QS+3.ARR STORE RETURN ADDRESS.  
1181 TEN SBYTE2.SSW10 SSW 10 ON ?  
1182 JT QST RETURN TO PRGM HALT IF YES.  
1183 ALC QS+3(2).N003 INCR RETURN TO SKIP HALT.  
1184 QS B \*-\* RETURN TO ROUTINE.  
1185  
1186 OST CLI X\*0200\*.X\*C2\* IS THIS A MODULE B SYSTEM ?  
1187 BNE QS DO A NORMAL HALT IF NOT.  
1188 L QS+3,XR1  
1189 MVC 2(2,XR1).+FFF8 SET UP MODULE B HALT.  
1190 B QS GO HALT.  
1191  
1192 \*\*\*\*\*  
1193 \* CKPAT \*  
1194 \*\*\*\*\* SUBROUTINE COMPARES ACTUAL SENSE  
1195 \* PATTERN VS A TABLE OF EXPECTED  
1196 \* PATTERNS AND PRINTS THE CORRS ERROR  
1197 \* MESSAGE.  
1198 \*  
1199 \*\*\*\*\*  
1200 CKPAT A N001.ARR  
1201 ST \*-7.ARR  
1202 L \*-8,XR1 STORE PATTERN TABLE ADDR.  
1203 A N002.ARR  
1204 ST \*-7.ARR

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
1401 35 02 0000 1205 L \*-\*,XR2 STORE ERROR MESSAGE ADDR.  
1405 36 08 169B 1206 A N001.ARR STORE RETURN ADDRESS.  
1409 34 08 1437 1207 ST PATCK+3.ARR  
1208  
140D 40 05 08 164D 1209 CKS CLC 6(6,XR1).TEST COMPARE TABLE PATTERN VS ACTUAL.  
1412 F2 01 10 1210 JNE TRY JUMP IF NO COMPARE.  
1415 2C 01 1421 02 1211 MVC ERMS.2(2,XR2) LOAD MESSAGE ADDRESS IN PRINT MESS.  
141A C0 E7 021A 1212 B PRINT PRINT CORR ERROR MESSAGE.  
141E 82 141E 1213 DC XL1\*82\*  
141F 18 141F 1214 DC IL1\*24\*  
1420 0000 1421 1215 ERMS DC AL2(\*-\*)  
1422 F2 87 0F 1216 J PATCK INCREMENT THE TABLE POINTERS.  
1425 36 01 16A3 1217 TRY A N006.XR1  
1429 36 02 169D 1218 A N002.XR2  
142D 7D FF 01 1219 CLI 1((,XR1),X\*FF\* END OF TABLE YET ?  
143C C0 01 140D 1220 BNE CKS CONTINUE IF NOT.  
1434 C0 87 0000 1221 PATCK B \*-\* RETURN TO ROUTINE.  
1222  
1223 \*\*\*\*\*  
1224 \* CMPARE \* EXPECTED EB1 & EB2 BYTES ARE COMPARED  
1225 \*\*\*\*\* AND ERROR BITS ARE IDENTIFIED BY A --  
1226 \* IN THE OUTPUT AREA.  
1227 \*  
1228 \*  
1229 \*\*\*\*\*  
143B 0000 1439 1230 XPT DC XL2\*0000\* EXPECTED EB1 & EB2 BYTES.  
143A 0000 143B 1231 ACT DC XL2\*0000\* ACTUAL EB1 & EB2 BYTES.  
1232  
143C 34 08 1497 1233 CMPARE ST CMPR+3.ARR STORE RETURN ADDRESS.  
1440 34 02 14CF 1234 ST TAERR+3.XR2 INITIALIZE OUTPUT ADDRESSES.  
1444 34 01 14D7 1235 ST TBERR+3.XR1  
144E 3C 01 1461 1236 MVI TA3+1,X\*01\* INITIALIZE BIT POINTERS.  
144C 3C 01 146E 1237 MVI TA2+1,X\*01\*  
1450 3C 01 1472 1238 MVI TA1+1,X\*01\*  
1454 3C 01 1479 1239 MVI TB3+1,X\*01\*  
145E 3C 01 1480 1240 MVI TB2+1,X\*01\*  
145C 3C 01 148A 1241 MVI TB1+1,X\*01\*  
1242  
1460 38 01 143B 1243 TAB TBN XPT-1,X\*01\* EXPECTED BIT ON IN EB2 BYTE ?  
1464 F2 10 0A 1244 JT TA1 JUMP IF YES.  
1467 38 01 143A 1245 TA2 TBN ACT-1,X\*01\* ACTUAL BIT ON IN EB2 BYTE ?  
146B F2 10 5E 1246 JT TAERR GO PUT AN -- IN OUTPUT IF SO.  
146E F2 87 07 1247 J TB2 CHECK EB1 BYTE.  
1248  
1471 38 01 143A 1249 TA1 TBN ACT-1,X\*01\* ACTUAL BIT ON IN EB2 BYTE ?  
147E F2 90 54 1250 JF TAERR GO PUT AN -- IN OUTPUT IF OFF.  
1251  
1478 38 01 1439 1252 TB3 TBN XPT,X\*01\* EXPECTED BIT ON IN EB1 BYTE ?  
147C F2 10 0A 1253 JT TB1 JUMP IF SO.  
147F 38 01 143B 1254 TB2 TBN ACT,X\*01\* ACTUAL BIT ON IN EB1 BYTE ?  
1483 F2 10 4E 1255 JT TBERR GO PUT AN -- IN OUTPUT IF SO.  
1486 F2 87 07 1256 J TC CONTINUE ANALYSIS.  
1257  
1489 38 01 143B 1258 TB1 TBN ACT,X\*01\* ACTUAL BIT ON IN EB1 BYTE ?  
148D F2 90 44 1259 JF TBERR GO PUT AN -- IN OUTPUT IF OFF.  
1260  
1490 38 80 148A 1261 TC TBN TB1+1,X\*80\* BIT 0 BEEN TESTED ?  
1494 C0 1C 0000 1262 CMPR BT RETURN IF SO.  
149B 0E 00 1472 1472 1263 ALC TA1+1(1),TA1+1 INCREMENT BIT POINTERS.  
149E 0E 00 146E 146E 1264 ALC TA2+1(1),TA2+1  
14A4 0E 00 1461 1461 1265 ALC TA3+1(1),TA3+1  
14AA 0E 00 148A 148A 1266 ALC TB1+1(1),TB1+1  
14B0 0E 00 1480 1480 1267 ALC TB2+1(1),TB2+1  
14B6 0E 00 1475 1479 1268 ALC TB3+1(1),TB3+1  
14C0 0F 01 14CF 169D 1269 SLC TAERR+3(2),N002 DECREMENT OUTPUT ADDRESSES.  
14C2 0F 01 14D7 169D 1270 SLC TBERR+3(2),N002  
14C8 C0 87 1460 1271 B TA3  
1272

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
14CC 3C 5C 0000 1273 TAERR MVI \*-\*,X\*EC\* PUT -- IN EB2 OUTPUT.  
14D0 C0 87 1478 1274 B TB3 CONTINUE CHECK.  
14D4 3C 5C 0000 1275 TBERR MVI \*-\*,X\*EC\* PUT -- IN EB1 OUTPUT.  
14D8 C0 87 149D 1276 B TC CONTINUE CHECK.  
1277  
1278 \*\*\*\*\*  
1279 \* BITSNF \*  
1280 \*\*\*\*\* THE EB1 & 2 BYTES ARE CONVERTED TO  
1281 \* A PRINTABLE BINARY FORM.  
1282 \*  
1283 \*\*\*\*\*  
14DC 00 14DC 1284 EB2T DC XL1\*00\* TEMPORARY STORAGE FOR EB2 & EB1  
14DD 00 14DD 1285 EB1T DC XL1\*00\* BYTES.  
1286  
14DE 36 08 169E 1287 BITSNF A N001.ARR  
14E2 34 08 14EB 1288 ST \*-S.ARR  
14E6 0C 01 14F1 0000 1289 MVC \*-11(2),\*-\*  
14EC 0C 01 14DD 0000 1290 MVC EB1T(2),\*-\* STORE EB1 & EB2 BYTES.  
14F2 36 08 169E 1291 A N001.AFR  
14F6 34 08 153D 1292 ST BTNF+3.ARR STORE RETURN ADDRESS.  
14FA 3C 01 150B 1293 MVI TNF+1,X\*01\* INITIALIZE BIT POINTERS.  
14FE 3C 01 1521 1294 MVI TNFF+1,X\*01\*  
1502 34 02 151F 1295 ST NF+3,XR2 STORE OUTPUT ADDRESSES.  
150E 34 01 153E 1296 ST NFF+3,XR1  
1297  
150A 38 00 14DC 1298 TNF TBN EB2T,X\*00\* THIS BIT ON IN EB2 ?  
150E F2 10 07 1299 JT ITSON JUMP IF SO.  
1511 3C F0 151D 1300 MVI NF+1,X\*F0\* MOVE IN A --.  
151E F2 87 04 1301 J NF  
151B 3C F1 151D 1302 ITSON MVI NF+1,X\*F1\* MOVE IN A -1-.  
151C 3C 00 0000 1303 NF MVI \*-\*,X\*00\* PUT 1/0 IN OUTPUT.  
1304  
1520 3F 00 14DD 1305 TNFF TBN EB1T,X\*00\* THIS BIT ON IN EB1 ?  
1524 F2 10 07 1306 JT ITCN JUMP IF SO.  
1527 3C F0 1533 1307 MVI NFF+1,X\*F0\* MOVE IN A --.  
152E F2 87 04 1308 J NFF  
152E 3C F1 1533 1309 ITON MVI NFF+1,X\*F1\* MOVE IN A -1-.  
1532 3C 0C 0000 1310 NFF MVI \*-\*,X\*00\* PUT 1/0 IN OUTPUT.  
1311  
153E 38 80 150B 1311 TBN TNF+1,X\*80\* CHECKED BIT 0 ?  
153A C0 10 0000 1312 BT \*-\* RETURN IF SO.  
153E 0E 00 150B 150B 1313 BTNF BT INCREMENT BIT POINTERS.  
1544 0E 00 1521 1521 1314 ALC TNF+1(1),TNF+1  
154A 0F 01 151F 169D 1315 ALC TNFF+1(1),TNFF+1  
1550 0F 01 1575 169D 1316 SLC NF+3(2),N002 DECREMENT OUTPUT ADRS.  
1556 C0 87 15CA 1317 SLC NFF+3(2),N002  
1318 B TNF CONTINUE CHECK.  
1319  
1320 \*\*\*\*\*  
1321 \* ERROR \*  
1322 \*\*\*\*\* SUBROUTINE IDENTIFIES SENSE BYTE AND  
1323 \* PRINTS ITS STATUS AND ERRORS.  
1324 \* SUBROUTINE CALLED BY -  
1325 \*  
1326 \* B ERROR  
1327 \* DC XL1\*N CODE IN HEX\*  
1328 \* DC XL2\*EXPECTED DATA\*  
1329 \* DC XL2\*ACTUAL DATA\*  
1330 \* DC XL1\*A --FF-- DESIGNATES END\*  
1331 \*  
1332 \*\*\*\*\*  
155A 00 155A 1333 NCOD DC XL1\*00\* CURRENT N CODE STORAGE.  
155B 34 0E 15E2 1334 ERRCR ST \*-7.ARR STORE RETURN ADDRESS IN XR1.  
155F C2 01 0000 1335 LA \*-\*,XR1  
1336  
15E3 34 01 156C 1337 CKIT ST \*-S.XR1  
15E7 0C 00 155A 0000 1338 MVC NCCD(1),\*-\* BRING IN W CODE FOR CHECKING.  
156D 3D FF 155A 1339 CLI NCCD,X\*FF\* EXIT IF DETECTED 'END FLAG\*'.  
1571 F2 E1 CB 1340 JE CCKUT

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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1341
1574 0C 5A 1D68 1D69 1342 MVC PRT(91),PRT+1 BLANK OUT PRINT BUFFER
157A 3D 01 155A 1343 CLI NCCD,X*01* IDENTIFY AND SET-UP BYTE HEADING.
157E F2 01 06 1344 JNE **5
1581 0C 10 1D41 1788 1345 MVC PRT-39(17),NCD1 * FUNCTION.
1587 3D 02 155A 1346 CLI NCCD,X*02*
1588 F2 01 0C 1347 JNE **15
158E 0C 0A 1D35 17C3 1348 MVC PRT-51(11),NCD2-22 * STATUS-LCR.
1594 0C 0F 1D4C 17D4 1349 MVC PRT-28(16),NCD2-5
159A 3D 03 155A 1350 CLI NCCD,X*03*
159E F2 01 06 1351 JNE **9
15A1 0C 11 1D42 17EB 1352 MVC PRT-38(18),NCD3 * I/O TRANSFER LINES.
15A7 3D 04 155A 1353 CLI NCCD,X*04*
15AB F2 01 06 1354 JNE **9
15AE 0C 08 1D3F 17F7 1355 MVC PRT-41(12),NCD4 * DATA ADDRESS.
15B4 3D 05 155A 1356 CLI NCCD,X*05*
15B8 F2 01 0C 1357 JNE **15
15BE 0C 0E 1D37 1806 1358 MVC PRT-49(15),NCD5-23 * DIAGNOSTIC-DTR.
15C1 0C 10 1D4C 1818 1359 MVC PRT-28(17),NCD5-5
15C7 C0 E7 1377 1360 B EPRNT2 PRINT BYTE ID'S.
1361
15CE 0C 09 1D34 1836 1362 MVC PRT-52(10),EB2 BUILD EB BYTE HEADINGS.
15D1 0C 09 1D4E 184C 1363 MVC PRT-32(10),EB1
15D7 C0 87 136C 1364 B EPRNT1 PRINT EB BYTE HEADINGS.
15DE 0C 0E 1D37 182C 1365 MVC PRT-49(15),BITS BUILD BIT LABE HEADINGS.
15E1 0C 0E 1D4B 182C 1366 MVC PRT-29(15),BITS
15E7 C0 87 1377 1367 B EPRNT2 PRINT BIT LABE HEADINGS.
15E8 F2 01 169D 1368 A N002,XR1
15EF 34 01 15F8 1369 ST **5,XR1
15F3 0C 01 1439 0000 1370 MVC XPT(2),*- * STORE EXPECTED BYTES.
15F9 3E 01 169D 1371 A N002,XR1
15FC 34 01 1606 1372 ST **5,XR1
1601 0C 01 1438 0000 1373 XYR1 MVC ACT(2),*- * STORE ACTUAL BYTES.
1607 C2 02 1D37 1374 LA PRT-49,XR2 STORE OUTPUT ADDRESSES.
1608 C2 01 1D46 1375 LA PRT-29,XR1
160F C0 87 14DE 1376 B BITSNF GO CALCULATE STATUS OF ACTUAL BYTES.
1613 143E 1614 DC AL2(ACT)
1615 C0 87 136C 1378 B EPRNT1 PRINT STATUS/REGISTER ID.
1619 0D 01 1439 1438 1379 CLC XPT(2),ACT EXPECTED AND ACTUAL EQUAL ?
161F F2 81 0A 1380 JE SKPER JUMP IF EQ.
1622 0C 0A 1D24 17A7 1381 MVC PRT-68(11),ERS GO CALCULATE ERROR BITS.
1628 C0 87 143C 1382 E CMPARE PRINT ERROR BITS.
162C C0 87 1377 1383 SKPER B EPRNT2 RESTORE XR1.
1630 3E 01 1606 1384 L XYR1+5,XR1
1634 36 01 1698 1385 A N001,XR1
1638 C0 87 1563 1386 B CKIT GO CHECK FOR NEXT BYTE.
163C 36 01 1698 1387 CKOUT A N001,XR1 INCREMENT RETURN ADDRESS.
1640 34 01 1647 1388 ST **7,XR1 RETURN TO ROUTINE.
1644 C0 87 0000 1389 B *-4
1390
1391 *****
1392 * RESERVED *
1393 *****
1648 000000000000 1640 1394 TEST DC 6XL1*00* ACTUAL SENSE DATA STORAGE.
164E 0000000000000000 1656 1395 WORK DC 9XL1*00* WORK AREA.
1656 C0
1396 *****
1397 * TABLES *
1398 *****
1399
1656 1400 EXPY EQU *-1 TAELE OF ROUTINE 05'S ERROR PATTERNS.
1657 0300E100FD00 1656 1401 DC XL6*0300E100FD00* EOT CHECK.
165C 0300C100FD00 1662 1402 DC XL6*0300C100FD00* END RESET - 0.
1663 0C00E100F900 1668 1403 DC XL6*0000E100F900* DISCONNECT CHECK.
1669 0E00E100FD02 166E 1404 DC XL6*0E00E100FD02* END RESET - 1.
166F 0E00C100F902 1674 1405 DC XL6*0E00C100F902* INTR PENDING CK.
1675 0000C100F500 167A 1406 DC XL6*0000C100F500* END RESET - 2.
167B 0800E100F900 1680 1407 DC XL6*0800E100F900* DISCONNECT DRIVER CHECK.

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

1681 0E00E100F902 1686 1408 DC XL6*0800E100F902* ATTACHMENT DRIVER CHECK.
1687 FF 1687 1409 DC XL1*FF* * END OF TABLE *
1410
1687 1411 ERMS05 EQU *-1 TABLE OF CORRESPONDING ERROR MESSAGE ADDRESSES.
1688 1C41 1689 1412 DC AL2(MSSA)
168A 1C59 1688 1413 DC AL2(MSSB)
168C 1C71 1680 1414 DC AL2(MSSC)
168E 1C89 168F 1415 DC AL2(MSSD)
1690 1CA1 1691 1416 DC AL2(MSSE)
1692 1CB9 1693 1417 DC AL2(MSSF)
1694 1CD1 1695 1418 DC AL3(MSSG)
1696 1CE9 1697 1419 DC AL2(MSSH)
1420
1421 *****
1422 * CONSTANTS *
1423 *****
1698 0000 1699 1424 N000 DC IL2'0'
169A 0001 169B 1425 N001 DC IL2'1'
169C 0002 169D 1426 N002 DC IL2'2'
169E 0003 169F 1427 N003 DC IL2'3'
16A0 0004 16A1 1428 N004 DC IL2'4'
16A2 0006 16A3 1429 N006 DC IL2'6'
16A4 0020 16A5 1430 H0020 DC XL2'0020'
16A6 0080 16A7 1431 H0080 DC XL2'0080'
16A8 0880 16A8 1432 H0880 DC XL2'0880'
16AA 0190 16AB 1433 H0190 DC XL2'0190'
16AC 0180 16AD 1434 H0180 DC XL2'0180'
16AE 01A0 16AF 1435 H01A0 DC XL2'01A0'
16B0 0040 16B1 1436 H0040 DC XL2'0040'
16B2 FFF8 16B3 1437 HFFF8 DC XL2'FFF8'
16B4 002C 16B5 1438 H002C DC XL2'002C'
16B6 F055 16B7 1439 HFD55 DC XL2'F055'
16B8 F9AA 16B9 1440 HF9AA DC XL2'F9AA'
16BA 0082 16BB 1441 H0082 DC XL2'0082'
16BC 0188 16BD 1442 H0188 DC XL2'0188'
16BE 0882 16BF 1443 H0882 DC XL2'0882'
16C0 00FF 16C1 1444 H00FF DC XL2'00FF'
16C2 0010 16C3 1445 H0010 DC XL2'0010'
16C4 3082 16C5 1446 H3082 DC XL2'3082'
16C6 3080 16C7 1447 H3080 DC XL2'3080'
16C8 FC04 16C9 1448 HFC04 DC XL2'FC04'
16CA FE00 16CB 1449 HFE00 DC XL2'FE00'
16CC 0885 16CD 1450 H0885 DC XL2'0885'
16CE 164E 16CF 1451 DATA DC AL2(CADATA)
16D0 C1C1 16D1 1452 CAA DC CL2'AA'
16D2 F5F5 16D3 1453 CE5 DC CL2'55'
1454
1455 *****
1456 * MESSAGES *
1457 *****
1603 1458 MSG18 EQU *-1
16FA 1459 MSG1 DC CL39*INSERT THE WRAP CONNECTOR.
1459
16FA 1460 MSG2B EQU *-1
1721 1461 MSG2 DC CL39*PERFORM SYSTEM RESET AND START.
1461
16FB D7C5D9C6D6. 9D440 1703 E2E8E2E3C5D440D9 1461
1708 CEE2C5E34C1D5C4 1461
1713 40E2E3C1D9E34B40 1461
171B 404C4040404040 1461
1462
1722 C9D5E2C5D9E340E6 173D 1463 DC CL28*INSERT WRAP CONNECTOR
172A D9C1D740C3D6D5D5 1463
1732 CEC3E3D6D5404040 1463
173A 40404040 1463
173E 40D5DE3CE4C6C40 1758 1464 UP3741 DC CL27* NCTE - CPU MAY DROP POWER.

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

EPR LOC OBJECT CODE ADDR SYMT SOURCE STATEMENT

1AEE D24E 1501  
1AED D7C5D9C6D6D9D440 1B1D 1502 HD06 DC CL49\*PERFORM END OF TRANSFER -EOT- USING I/O SELECT 3.\*  
1AF5 C5D5C440D6C640E3 1502  
1AFD C9C1D5E2C6C5D940 1502  
1E05 60C5D6E36040E4E2 1502  
1B0D C9D5C740C961D640 1502  
1B15 E2C5D3C5C3E340F3 1502  
1B1D 4E 1502  
1B1E C5D6E340E2C5D8E4 1B30 1503 EOT DC CL19\*EOT SEQUENCE CHECK.\*  
1B26 C5D5C3C540C3C8C5 1503  
1B2E C3D24B 1503  
1B31 E4E2C540D9C5C1C4 1B62 1504 DC CL50\*USE READ/WRITE CALL TO RESET I/O TRANSFER LINES 3 \*  
1B39 61E6D9C9E2C540C3 1504  
1B41 C1D3D340E3D640D9 1504  
1B49 C5E2C5E340C961D6 1504  
1B51 40E3D9C1D5E2C6C5 1504  
1B59 C940D3C9D5C5E240 1504  
1B61 F340 1504  
1B63 C1D5C440F44B 1B68 1505 HD09 DC CL6\*AND 4.\*  
1B69 E3C5E2E340C1C2C9 1B9C 1506 DC CL52\*TEST ABILITY OF I/O TRANSFER LINES 3 AND 5 TO RESET \*  
1B71 D3C5E3E840D6C640 1506  
1B79 C961D640E3D9C1D5 1506  
1B81 E2C6C5D940D3C9D5 1506  
1B89 C5E240F340C1D5C4 1506  
1B91 40F540E3D640D9C5 1506  
1B99 E2C5E340 1506  
1B9D C961D640C4C9E2C3 1BB1 1507 HD0A DC CL21\*I/O DISCONNECT LATCH.\*  
1BA5 D6D5D5C5C3E340D3 1507  
1BAC C1E3C3C84B 1507  
1BB2 E4E2C540C961D640 1BE0 1508 DC CL47\*USE I/O TRANSFER LINES 1 AND 2 TO GENERATE END \*  
1BBA E3C9C1D5E2C6C5D9 1508  
1BC2 40D2C5D5C5E240F1 1508  
1BCA 40C1D5C440F240E3 1508  
1BC2 D640C7C5C5C5D9C1 1508  
1BDA E3C540C5D5C440 1508  
1BE1 D6C640E3D9C1D5E2 1BF2 1509 HD0B DC CL18\*OF TRANSFER -EOT-.\*  
1BE9 C6C5D94060C5D6E3 1509  
1BF1 604B 1509  
1BF3 E3C5E2E340C1C2C9 1C23 1510 DC CL49\*TEST ABILITY TO LATCH I/O TRANSFER LINES 3, 4, 6 \*  
1BFB D3C9E3E840E3D640 1510  
1C03 C3C1E3C3C840C9E1 1510  
1C0E D640E3D9C1D5E2C6 1510  
1C13 C5D940D3C9D5C5E2 1510  
1C1E 40F36E40F46B40F6 1510  
1C23 40 1510  
1C24 C1D5C440F74B 1C29 1511 HD0C DC CL6\*AND 7.\*  
1C2A C5D5C440D6C640E3 1C41 1512 M55A DC CL24\*END OF TRANSFER CHECK.\*  
1C32 C9C1D5E2C6C5D940 1512  
1C3A C3C8C5C3D24B4040 1512  
1C42 C5D5C440D9C5E2C5 1C59 1513 M55B DC CL24\*END RESET CHECK - 0.\*  
1C4A E340C3C8C5C3D24C 1513  
1C52 6040FC4B40404040 1513  
1C5A C961D640C4C9E2C3 1C71 1514 M55C DC CL24\*I/O DISCONNECT CHECK.\*  
1C62 D6D5D5C5C3E340C3 1514  
1C6A C8C5C3D24B404040 1514  
1C72 C5D5C440D9C5E2C5 1C89 1515 M55D DC CL24\*END RESET CHECK - 1.\*  
1C7A E340C3C8C5C3D24C 1515  
1C82 6040F14B40404040 1515  
1C8A C5D5E3C5D5E4D7E3 1CA1 1516 M55E DC CL24\*INTERUPT PENDING CHECK.\*  
1C92 40D7C5D5C4C9D5C7 1516  
1C9A 40C3C8C5C3D24B40 1516  
1CA2 C5D5C440D5C5E2C5 1CB9 1517 M55F DC CL24\*END RESET CHECK - 2.\*  
1CAA E340C3C8C5C3D24C 1517  
1CB2 6040F24B40404040 1517  
1CEA C4C9E2C3D6D5D5C5 1CD1 1518 M55G DC CL24\*DISCONNECT DRIVER CHECK.\*  
1CC2 C3E340C4D9C9E5C5 1518  
1CCA D540C3C8C5C3D24B 1518  
1CD2 C1E3E3C1C3C8D4C5 1CE9 1519 M55H DC CL24\*ATTACHMENT DRIVER CHECK.\*

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LOC OBJECT CODE ADDR SYMT SOURCE STATEMENT

1CDA D5E340C4D9C9E5C5 1519  
1CE2 D940C3C8C5C7D24B 1519  
1CEA C961D640C4C9E2C3 1D0D 1520 PSDIC DC CL36\*I/O DISCONNECT LATCH FAILS TO RESET.\*  
1CF2 D6D5D5C5C3E340D3 1520  
1CFA C1E3C3C840C6C1C9 1520  
1D02 D3E240E3D640D9C5 1520  
1D0A E2CEE34B 1520  
1D0E 1068 1521 PRT DS CL51 PRINT FIELD.  
1D69 40 1D69 1522 DC CL1\*40\* CLEARING BYTE.

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

ERR LCC OBJECT CODE ADDR SYMT SOURCE STATEMENT

CRCSS-REFERENCE

```

1524 *****
1525 * EQUATES *
1526 *****
0008 1527 ARR EQU X*08*
0216 1528 LINK EQU X*216*
021A 1529 PRINT EQU X*21A*
1A38 1530 PRCK EQU DISCK
0001 1531 XR1 EQU X*01*
0002 1532 XR2 EQU X*02*
0222 1533 HALT EQU X*222*
0080 1534 SSW10 EQU X*80*
020A 1535 SBYTE2 EQU X*020A*
0A07 1536 FRTN EQU X*0A07*
164E 1537 DADATA EQU WORK-8
16CC 1538 H0008 EQU H0885-1
1656 1539 SNE0C EQU WCRK
1699 1540 H0000 EQU N000
169B 1541 H0001 EQU N001
169D 1542 H0002 EQU N002
16A1 1543 H0004 EQU N004
164D 1544 TEMP EQU TEST
0A11 1545 END BEGINN

```

```

SYMBOL T LEN VALUE DEFN REFERENCES
ACT A 002 143B 1231 1079* 1081 1245 1249 1254 1258 1373* 1377 1379
ALTER A 004 0A43 004E 0043
ARR C 001 0008 1527 1098 1138 1141 1144 1163 1180 1200* 1201 1203* 1204 1206* 1207
1233 1287* 1288 1291* 1292 1334
BEGIN A 001 0A0D 0024 0017
BEGINN A 001 0A11 0028 0059 1545
BISY A 013 185F 1477 1125
BITS A 015 182C 1473 1074 1365 1366
BITENF A 004 14DE 1257 1080 1376
BSY A 01F 186F 1478 0824
BTNF A 004 153A 1313 1292*
BUSY A 004 13E2 1122 0072 0282
CAA A 002 16D1 1452 0134
CKIT A 004 1563 1337 1386
CKOUT A 004 163C 1367 1340
CKPAT A 004 13ED 1200 0473
CKS A 005 140D 1209 1220
CMPARE A 004 143C 1233 1064 1382
CMPR A 004 1494 1262 1233*
CES A 002 16D3 1453 0188
DADATA A 001 164E 1537 1451
DAMESY A 004 1020 0821 0833
DATA A 002 16CF 1451 9080
DISCK A 018 1A38 1455 0758 1530
DCDC A 006 0AF1 0115 0119
EB1 A 010 184C 1475 1072 1363
EB1T A 001 14DD 1265 1290* 1305
EB2 A 010 1836 1474 1362
EB2T A 001 14DC 1284 1298
EOT A 019 1830 1503 0470 0934
EOTACT A 010 1AEC 1501 0532
EPRNT1 A 004 136C 1128 0107 0109 0111 0114 1073 1082 1364 1378
EPRNT2 A 004 1377 1141 1071 1075 1085 1360 1367 1383
EPRNT6 A 004 1382 1144 0116
ERDTR A 004 08D0 023E 0209
ERMS A 002 1421 1215 1211*
ERMS05 A 001 1687 1411 0475
ERROR A 004 1558 1334 0091 0163 0225 0242 0326 0345 0362 0379 0449 0477 0535 0606
0693 0761 0786 0871 0937
ERS A 011 17A7 1467 1083 1361
ER0A A 004 10F1 08E5 0849 0858
ER0B A 004 1.79 0931 0913 0923
ER0C A 004 12B9 1065 0993 1000 1009 1016 1025 1032 1041 1048
ER05 A 003 0DA9 0463 0423 0425 0427
ER05A A 004 0D80 0443 0435 0437
ER05A A 004 OFFB 07E5 0734
ER09B A 006 101F 0772 0740
ER09C A 006 1031 0776 0748
ER4A A 004 0C7D 0322 0286
ER4C A 004 0CC5 0356 0298
ER4E A 004 0CE9 0373 0311
ER44 A 004 0CA1 0336 0292 0304 0316
ER7A A 004 0EA6 0595 0578
ER7B A 004 0EB1 0568 0587
ERBE A 004 0F59 0676 0651
ERBD A 004 0F68 0681 0660
ERBF A 004 0F73 06E5 0669
EXPY A 001 1656 1400 0474
FRTN C 001 0A07 1E36 00A1*
HALT C 001 0222 1E33 0047 0098 0117 0170 0232 0249 0335 0352 0369 0386 0459 0490
0542 0613 0700 0768 0793 0828 0878 0944 1061 1088 1118 1129
H00A A 021 18E1 1507 0812
H00B A 018 1BF2 1E09 0897
H00C A 006 1C29 1511 0963
H004A A 033 1577 14E7 0268
H004B A 026 1991 14EE 0274

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SNS5A	A	002	ODDF	0486	0415* 0419* 0422 0422 04E3
SNS5B	A	002	ODDA	0483	0416* 0420* 0424 0424 04E4
SNS5C	A	002	ODDS	0480	0417* 0426 0426 0465
SNS5D	A	002	OD92	0452	0432* 0434 0434
SNS5E	A	002	OD97	0455	0431* 0436 0436
SNS6	A	002	OE38	0538	0520* 0522* 0524 0524
SNS77	A	002	OECB	0609	0574* 0575* 0577 0577 0583* 0584* 0586 0586
SNS8B	A	002	OF8D	0696	0643* 0645* 0647* 0648* 0650 0650 0654* 0656* 0657* 0659 0659 0663*
					0665* 0666* 0668 0668 0676*
SNS9A	A	002	100D	0764	0731* 0733 0733
SNS99	A	002	1051	0789	0737* 0739 0745* 0747 0772* 0776*
SPECL	A	004	OAB3	0102	0070
SSW10	C	001	0080	1E3*	1181
STRC	A	030	19F0	1491	1068
TAERR	A	004	14CC	1273	1234* 1246 1250 1269*
TA1	A	004	1471	1249	1238* 1244 1263 1263*
TA2	A	004	1467	1245	1237* 1264 1264*
TA3	A	004	1460	1243	1236* 1265 1265* 1271
TBFRR	A	004	14D4	1275	1235* 1255 1259 1270*
TB1	A	004	1489	1258	1241* 1253 1261 1256 1266*
TB2	A	004	147F	1254	1240* 1267 1267*
TB3	A	004	1478	1252	1239* 1247 1268 1268* 1274
TC	A	004	1490	1261	1256 1276
TFRP	A	001	164D	1544	1163* 1164
TEST	A	001	164D	1354	0463* 0464* 0465* 0972* 0575* 0977 0980 1209 1544
TNF	A	004	150A	1298	1293* 1312 1314 1314* 1318
TNFF	A	004	1520	1305	1294* 1315 1315*
TRLER	A	031	1944	1485	0222
TRY	A	004	1425	1217	1210
UNSET	A	029	19D2	1490	0342
UP3741	A	027	1758	1464	
WDRIV	A	C19	1A03	1492	0359
WORK	A	001	1656	1395	1076 1537 1539
WRP	A	037	190F	1483	0138 0192
WRPCK	A	022	1925	1484	0161 0239
XPT	A	002	1439	1230	1078* 1243 1252 1370* 1379
XRI	C	001	0001	1531	0040* 0041 0306* 0308 1077* 1164* 1165 1166 1167 1168 1173 1188*
					1189 1202* 1209 1217* 1219 1235 1296 1335* 1337 1368* 1369 1371*
					1372 1375* 1384* 1385* 1387* 1388
XR2	C	001	0002	1532	1076* 1205* 1211 1218* 1234 1295 1374*
XVR1	A	006	1601	1373	1384

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

OBJECT CARD LISTING

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

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GBK GED PN 55 58422 EC 824870 3741 ATT TEST WITH WRAP CONNECTOR 84588482D 40210000
T+-Y:GED E E-7 **4AE D BVG /OH ECK*O=UC-CH*BF-Q XE2C8EASZCEVJEA5 Z0-DHML&AB-*8 Z <BYD 63M40210001
T+-Z5A23-EU32/DE 88E2<OH*BHUC/OH* HD&D BOP /OH&JKX QWUE/OM HX*( C*E BDE. /1|C8C0&C*MD 023D D#040210002
T+-DOJJE<MHDWLE DEK&G60D/C&DHY&D -OHDBEXBG /BC1E Z&EC /1NS MU*** C *CH*XLXIBJOH*BHU -OH* J8840210003
T+... /O&EOD/C&D OWE&D/O DL+C1*GKB <MA4>GK* /1|XCBD )IT.OH*LS O:GKO Q:XE&GD60&PA4?CB )/4 *1440210004
T+-XW.EBGC60K&A UE93 /1+B0H*BHUC SOH*H&EH E&K< JV WE_E /OH&E&KMRCAE SOH*EF-MKFNS /1< )OH* 72840210005
T+-_D&|O|COIJJE 9KD<M 4AB5 .LX& A /S /OFE0/QRIM /OH*ND0|9D- **BB GD92JQ*BG SI H*8 G /O 3J&40210006
T+-> 0 .* CAFNE 048BG /ZAIJU|C-| /OHEAJH*RXBGD17 /1|C8C0&C*MMO_3A CB=M( 6?SB=C2 LQ 1JJ0 5T*40210007
T+-2PMLACE#8( 6) =B#3 -EHO0H*BFXH -FMJ H&BGENXC=E |" /1+*UR. /OH S&B| /OH00H*BFXH OFKM O.Y40210008
T+-0K&E. /1NS *5 N **C*OH*XLXIFJOH* BHU SOH*EE-E 6&7 /OH&E&KDR|4BU0H* BF-M&FRG /1< )OH* L0" L:40210009
T+-1|C33&CA&E/| K<D<<T04ACH&CT-H AN|E RCACC.<E 62 3C.62 OT3&- 0&03 PC&D<503N&-E&84 H<D< RCU40210010
T+-2HC.<< 623C.G 2 MYB 63#8A|8#D< C&D<=039&-E*E<E< <X04AC.<<X-HA&KB G /S /OHE0/H&EM UOH* L/440210011
T+-3CENXC*6 |" /1+*UTG /OH&E&L /OH00H*BFXH|F|E I&BGENXC=E |" /1+*UU. /OH&E&B- /OH K1U40210012
T+-3=E*BG /B01Y C&BP /1NS *D *** C *OH*XLXIH20H*EHL V0H*BE&BG /B0JY WEBS /1NS *XB C *OH* #-840210013
T+-49D92K&*EG SI I&8G /OE 710H* EFUMUF*SN Z*BGD17 /1|C&C0&84DE&4< B<DN(73ABC)Y0&07 N| *** M 640210014
T+-54C)@D 7EC&D (707)B-E-C&D(6-7 QD-EPC&D(5&7L&-E +<MDO>*( CLABCR* 0J&E&XC&D(U-6&8-D (C&D 3.D40210015
T+-67CR*(V-HAA<B G /S /OHE0/H&EU ZOH*NDOM ***** YD *** C*OH*XLXIH20H* BHU ZOH*BE-0AEUU (700 :H040210016
T+-7D JR.C)Y< JR (C)P /OHE0/<S<D YOH*LRJRDEY- /1N S *UE ***** H ***** *E&GD92K**B G SH 8D040210017
T+-8V&BT /OHDA- +K&BG /ZE<JX)EHS /1< )OH*LO" 8|(( AA-(CACAECT-1&JE #| ++ 4ACT-+(XB A /O 5HD40210018
T+-9-OH*BFXHHF>1 *X&CENXB ***** |" /1+*UIG /OH&E&E. /C+OAC +7*BG /Z EHJDC&H- /1< )OH* LO" :L-40210019
T+-:S|CO1&JE* <MM 0W3EEZX3&1 0&0# .<D<+204ACX*+2-M AH&EE&EDD1JJERR&4< <D<+23ACCX*( 6# .CXU 1Y040210020

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4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+ #02-DK24 (0M# BET31FZQ# 6#KBY\* M| |K̄EVTYAC\_ /OM E0S EY4 >0M#N00| 5 \*\*\*\* \*B8GD92L0XB G SH \$BU40210021

T+ @J&B# /OHCB |X@BG /ZE.J.66HT /1< )0M#L0M @|CE AE.7261 060=(84< H<D<|T~(CDCACC84 0608 EAU40210022

T+ \*TE4AC84|S#H A|~(CHCACC87361 060=(<D<|TE4ACE4 |S#HAC~(CECACC87 361 060=(<D<|TE4 AC84 8YY40210023

T+ =GCE72 K636 7 /OH0| Y|TC34FZQ 0E =M@Y\*L||CEVTO NC9L2/O-8\*1D0|A0 |V<CBG /,BHADT6B# /1M :0D40210024

T+ -"BCC|9 \*\*\*\* \*QB CD92L <BG SI .XB G /QI AAT0M#BFUM 8FE/ D\*BGD17 /1| C@C0@<MDO73EEEXD 1JJQ :-040210025

T+ -"WLAACC 4( J |D 72 K.366 0E1A JC6D&MJ3IE-D=84 H&4M <D<6M&4ADED 02"HA|~( C\*BG /S /OH 03<40210026

T+ / 8FX+KFT/ .QB GENXC= 0 |" /1+ \*U3G /OHS6B" /CH CC D&MASI||6EVTX ADET /1 "C D&MAS .||< 6H 40210027

T+ /A3FZQ: JAQ0H# BFXH-FD( <<CBGENX C \*\*\*\* |" /1+\*U2. /OM56CC /OH0B- JE+BG /ZEKJ>16H. /1< N#440210028

T+ /B>GLEAEZX366C A&/BEOH#BFXH&FF' (\*B8GD92LN\*BG SI (\*EG /S3E 7AC/B 0H\*LG+BGD0|0|C0 16JQ )B@40210029

T+ /CZ3LEEEZX366C 36061JJJE<MMOWLA CD&(| JDCD&G2 K. 366C36061JJSC<MM OWLACD6<(| JDCD&G 2 S\* 80840210030

T+ /CUE4 (CH#BE#B G /,BIA4(6CG /1N S " C"CH\* LXI( J0H#BMU 10H#BE-X DR7 /OHEJMD8UB .OH# BCD40210031

T+ /E-D17 /1|C@C0 @<MDD1LEAEX-36-D 1JJJE<MMOWLAEDCX ( JF.DOX2 KX16JS E<MDD1"(A LEEEXX 1JJQ M:640210032

T+ /F&LAEDQX( JF .DOX2 6X16JE#84 (OH#BE#EG /,BD1X 0&C. /1NSA6- C "OH\* LXI(KOH#BMU 20H\* 3RD40210033

T+ /GN /OK |"OH# BFUM7GBV .<BGD17 /1|C@C08<MMO\_LA CEU416JEZ<MMO\_LA CEUX9 JR<DZC++ D OK?H 4H#40210034

T+ /HCU<\*16JEX<MM OWLEAED7361 1JJJE /<MMOWLACEVQBA/R M|6CCN?HA>3EAED4 061RC| ONC4 EVS 2 E- 9 U40210035

T+ /I.<MDD.3EEEX0 1JJJE<D<ONTOHEV6 \*B/ROB-F<MDDQ.LA CEVCG ARY|C ON7H A:TEAED41JJJEV<MM OWL 1HH40210036

T+ /HF&1RO|BHONC4 SEV\$2 NB16JEX<D< ONTO EV6' AROB-E <<MDDC.LEEEE.D1JJJE R<D<ONT1BEV6'6/R 08-D \*TU40210037

T+ /A<LEAED\*061R 0| CNC4 EV\$2 J# /OH0OH#BFXH(FT/ <88GD92LNB8G SI <@BG /S /OHE0/B R8D :Z440210038

T+ / .0( OJGL|P:8B GD7\* <EJ44FDC /1( XC 8)(1-XOH\*L)EH BEV8E J47C DM+JR MC DM+1RODH\*M7/E #OH# 6-840210039

T+ /<7D6<B/4UE:- /168CH\*L)88GD92 LN<BG SI (<BG /C 4EA<7<MDDCZ3EBE2U 1JJJER84 (OM L+<B G \*\*\*\* QDQ40210040

T+ /120H#BFXH&FEI |XBGD92E\*\*BG SI |XBG /S /OHE0-4 CPA "OH\* LXIMSON# BHU "OH#BET&HD9X 8-J< ":-40210041

T+ /+T7HGD36HD9X 8-/+&Y\*H( -LW32 FDB# /OPE EX)E 1 EGG-)E\*BG \*\*\*\* 4BAR ((6DOLJ-BFUB F< EM \*\*\*\* 00Y40210042

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+ /YF HEM&DQ 12 R \*BG /DFH/Z&4H# B( -L535 --2D Y + J|PEZ" /O |\*M B < AD\*65 J|PL D RE.< K 640210043

T+ /ETOM#L5CCHEZX 4BA|8(ED CQHEZ4 4BA&D(6F CQHEZX 4EA&7LEMFEU72 J 2 J6/ XBG /DBF 8Y\* K8X40210044

T+ /J;C3QAE0<6 /E )->8A0 DMC\*BG \*\*\*\*\* (-MV36BE<8 4 JLP| DMQLOAEF- 8 JJ2| DM:LOAEH 8 J6 01 40210045

T+ /KRST-AECT2D Y 8 J6:2/A:8Y\*G+ D M+?H&NC-AEEX2D Y 8 J6#8/A+8Y\*G+ D M+?H&JCS EH. D C- M3H40210046

T+ /LMEGM+8 EF- ME 2 EFDMQ68 FHY MS-8 EH M- 8 EGU M:8&AE<8CX&8AE(8 OX\*BCEF 8P \*\*\*\* OH# M:CO =#<40210047

T+ /M|P \*\*\*\* OH\*MU (-CB3&HE+X< JL 1 < JL) 6EAE S( -N|LOAE&8 JM /E HNG3&AELM8 AL \*8/ =:440210048

T+ /NHA330EJ72/06 (.JM|) \*\*\*\* C- E(7 2D \*8&AM38Y\*DI|C N<30 8-AM.OA \*\*\*\* 8 E&XNB08 EKD NH&8 LHY40210049

T+ /CE JM-EZ4| JM 5EZ7 /1MH C&HEO. B 6 ( DNS 0 ENY \*\* C7\*EN.2-8<O/S YGOU\* JNEB-DFCA 16J\* 7 M40210050

T+ /P >C4BEN.2 60 <B/45E&<<C15<E\*E 1:EB-DFCAD)E/- .|6&ND?HAA-0.GLB P\*34EEN.2 6C<C/4 7F 9 9/D40210051

T+ /PCA 1LA-0OH# L|00IGLSQ(-OIGH- 06<BGD60<C/47FE0 <C/S.FB3 /1(7(-D OXLEAE-< J69 \*\*\*\* 6 JQ 3.440210052

T+ /C6XL&AE-Q< J6 # CE /470-D)K&B CE(8M+88GD60( J6 SEC72-6Y<B/4UE:- /168OH\*L)3MAE-Q 6 JQ 88\*40210053

T+ /R1W&EED<6 JE S( DCJ&B8 \*\*\*\*\* C MD "E C <D "E +D =E . +D "EH H <D J#H40210054

T+ /EX |UB CA |U B C/ |U B C/ |U B\*11AGEU\*\*J21G+D \*>J3JGU " A H \*\*\*\* 0 D 0 H B BH AU D ;RM40210055

T+ /SX- F- DC"= X"NP9D-BB 8-HX-C " A 0-TB " L= S EEU8A0-PS2)PS1)X T6+|H1MCW6\*GP6<| 05)M 3A-40210056

T+ /S1\*|TS\_V.6CA 6CA 6DA 6DA 6(= E6\*806)J 8>TS88P ME(XE8XPT6<GN1DC 888GR84\_ 6DA 6DA 6<CU RB-40210057

T+ /)S1.EE:( 9\_X A54CC&\_PN1\*|TS\_V 6DA 6DA 6(P088N 0DCC5=J 5<GV&<L R5\_) 5\*S\*1)V.2\*R 8\_0 5YQ40210058

T+ /0E4CT9(XN6(= 09XPR&<.AO'I 5\_N 0)PDE(XE4\*8A1CC FE)8E6\*GMK&L0E+> Y8)|E5DCR1:;E86\_ 3/> 8440210059

T+ /-LC)XTK51\*P<P R6)8RPE1\*1>LN0=| 15\_N 6\*PE2:;T1)X SE&ETS+I 0>TT1MC L1)PG88/ 0\*8US:( 6\*M MC040210060

T+ /->1&XS8&PR20G 06+|R0)PS1XPR&(| 15\*PS1<GTOMCA1<L R1:;S1<XA1\*POE>| 104CB: +|EE<LA8BE 8\*U \*\*840210061

T+ /IO)FS1XPR&(X E18XS8&PR&DC16|1 84C46|N \*UC7Q<P EBUCB: +|EQFCE07E 0>TT10C3\*"L16<X SE(M P/Q40210062

T+ /SD5( 6+PA1+ / 88-4&MCI8UC89+. YK"|7:|E 0>LS:DC C2<PCAUS1)PS1MC F5\_V 88TE&FCW6\*G PE<< "JH40210063

T+ /S\*5\_FN1\*|TS\_V -6CA 6DC11DCE2:| SK&XDE+.ES;E6<| H1\*|KK6CW6\*GP6<| 05)PEC=|06DA 5)S T6<U \*1Q40210064

4021 3741 ATTACHMENT TEST WITH -WRAP CONNECTOR-

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/T:5:;T0) | L1\*J .6DA QFA-6<XN8XP RB4C6\*GP6< | 05)F E0= | 05MA-QFA 6+ | EB> | 2)PT11XF0+ | E6<6 1/-40210065

T+/U56\*XV1)X56<G N1DCR1\* | E2:PE611 .1(XI9\*PRQ)XEO8P 19\*PR6< | H1\*(KK= | R0)PS1XPR6<PR61\$ RE<< 0H840210066

T+/V00: | C2DCN5> | 6\*PS1: | .8&PS84C P0: | T1)XN6FCX5EA .2XPT6<GN1DCR1: . EB4CR1\*GDQ:SR2: | E6<6 0/<40210067

T+/W.64XV1)XSK8G C88XV0: | E6<V/SUC S1) | E0= | 48XN1: | .1)FD2: | SF6+ | R0)P S1XPR6FCE5> | (-6+. E6+6 RA440210068

T+/XW1)PC1NCT1: . TK8V/SUCT6\*GN8X\$ E6MCL2)PE8UCN5> | 6\*PS1: | (.20G06+ | R0)PS1XPR6< | IS\*W 8XM KHY40210069

T+/Y/5: .E6< | H1\* | KK=SR2: | E6<LR2: | P E6MCC2<PC4U7R1\*G D6<LR2: | PE6MCC2<P C4U7I0)R 0XPL1\* | TE<< ST040210070

T+/Z\*2<PC4U7E94P NE(-A6\*XT:DCC2<P C4U7GEUCTEUC3\*ML 16(LA5=1.6(-A18N 0 | C0E<PN8\*XY5 | A .83M PH840210071

T+/EP8> | 6\*PS1: | 5XR 20G06+ | R0)P S1XPR6< | IS\*P5E | E 0)PD6 | (.20G06+ | R0)PS1XPR6< | IS\*W 96 WY440210072

T+/K6\*PS1: | 08T E0\*I.88PS84CR1: . EB4C01UC10)R 8\*X A5: | F1)V 48XN1: | \*F\_ | \*W\_ 0)PD6 | ) .8XM 0:840210073

T+/X(E: .E6< | XE8XP T6< | H1\* | KK8P084C C2<PC4U7P1)XF5\_X M6<PN1DC01UCTE\*G N8XSE6MA-1)STQDC U8XU 8E340210074

T+/H5+ ) 20G06+. E48PC84C3K8P084C S1)TU1)PC1MCC2<P C4U7U8XN 6\*PA1FG W6\*XT1MCC0) | LE+ | 0E(U JLM40210075

T+/>X1: .E84C10)R 8\*XAS: | F1)V 48X N1: | 84CA5\*J \*D? T1: | T6<GB2) | IS= / 5XR 20G06+ | R0)P S1XM 2.440210076

T+/>=E6MCL2)PE8UC 36<GN1DC56+ | 06(X E8XPT6<V/SUCD2: . C5\_FN1\* | T6< | A88 | MK+LS1MCI0)R 8\*X A5: | H 43D40210077

T+/791XFR6< | IS\*P S6 | E 0)PD6 | I 8\*R 18PN1)XAE8N 1)P DE< | SF6+ | R0)PS1XP R6FCE5> | (-K= | EB> | 0\*H M2040210078

T+/042) | IS= / 8\*R 48V.T08/ 20G06+ | R0)PS1XPR6< | IS\*P S6 | (.6 | J.6 | R 0)P DE< | .1)PD6 | SF6+ | R0)M #5840210079

T+/178XSE6MCC2<P C4U\_ 6<PN1DCR1: . EB4CC2<PC4UA-6 | A .6DA 6<V/SUCD2: . C5\_PN1\* | T6< | H1\* | KK4 8M40210080

T+/2D&DCE5\*J 6\*P S1: | 08TE0\*I 0DC 1K4A 6DC15: | E6: | L PEACF1)PD2)PG6< | H1\* | KK4CE5\*J 6\*P S1: | < PH-40210081

T+/3V6< | F1\* | K6FA 8U\_ 6DA 1<XS0\*8 N5\*PC84CCE\*XV1)V C8TE0\*I.0: | T0\* | H5<PN84CD6\*XV1)V 08- POU40210082

T114(1\* | KK8V/SUC D2: . CE\_PN1\* | T6< | A88 | H6<SA2) | S6+ | 06< | XE8XPTK ) \*\*\*\*\* PE840210083

T A5Z6 \*\*\*\*\* 1E 40210084

EB/E\*E7\*=-DC\*PHS =\*7M6F | C FX ASC R A SO Q \*\*\*\*\* 11350908741 1217458-40210085

----- LAST PAGE -----

4032 3741 ATTACHMENT DATA TRANSFER TEST

4032 3741 ATTACHMENT DATA TRANSFER TEST

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ERR LDC OBJECT CODE      ADDR STMT SOURCE STATEMENT
2 *                      LAST CHG :08 01 74
3      DECK 4
4      SEQ 0
0000 5 L3742 START 0
6      TREP
0A00 7      ORG X'AD0'
8 *****
9 *                      SECTION PREFACE
10 *****
0A00 4032 0A01 11      DC XL2'4032'      PROGRAM ID AND REVISION LEVEL
0A02 00      0A02 12      DC XL1'00'      SECTION FLAGS
0A03 01      0A03 13      DC XL1'01'      CURRENT ROUTINE NUMBER
0A04 0000    0A05 14      DC XL2'0000'     RESERVED
0A06 0A0D    0A07 15      DC AL2(BEGIN)    FIRST ROUTINE ADDRESS
0A08 FFFF    0A09 16      DC XL2'FFFF'     RESERVED
0A0A 405000  0A0C 17      DC XL3'405000'   SPUT
18 *****
19 *****
20 *                      PROGRAM NOTES
21 *****
22 *
23 * ABSOLUTE ADDRESSING NOTE -
24 *
25 * IF ANY CORRECTIONS OR MODIFICATIONS ARE MADE ON ROUTINES
26 * 01 - 0E, BE SURE TO CHECK THE ADDRESSES OF LABELS -JUMP-
27 * AND -INTS-. THESE TWO ADDRESSES MUST, WHEN OR'ED TOGETHER,
28 * ( INCLUDING THEIR PARITY BITS ) CONTAIN CORRECT PARITY.
29 * SEE THE EXPLANATORY NOTE IN ROUTINE 0E.
30 *
31 *****
32 *****
33 *****
34 *
35 * INTRODUCTION      PROGRAM TELLS OPERATOR TO PUSH SYSTEM
36 * RESET TO START THE TEST.
37 *
38 *****
0A0D 01 0A0D 39 BEGIN DC XL1'01'      DUMMY ROUTINE SETUP.
0A0E 00 0A0E 40      DC XL1'00'
0A0F 0A51 0A10 41      DC AL2(RTN01)
42 *****
0A11 C0 87 021A 0A15 43 BEGINN B PRINT PRINT SECTION HEADING.
0A15 42 0A15 44      DC XL1'42'
0A16 1E 0A16 45      DC IL1'30'
0A17 1ABE 0A18 46      DC AL2(UPSI0C)
0A19 40E0 0A1A 47      DC XL2'40E0'
0A1B C0 87 021A 0A1F 48      B PRINT PRINT OPERATOR INSTRUCTIONS.
0A1F 06 0A1F 49      DC XL1'06'
0A20 17 0A20 50      DC IL1'23'
0A21 1AA5 0A22 51      DC AL2(INTRD)
0A23 3C 40 1F78 52      MVI PRT+1,X'40' SET UP 'CLEARING' BYTE.
0A27 0C 5A 1F77 1F78 53      MVC PRT(91),PRT+1 CLEAR PRINT FIELD.
0A2D C2 01 0A51 54      LA RTN01,XR1 RESTORE RTN01 ADDRESS.
0A31 3A 01 0A07 55      ST FRTN,XR1
56 *****
0A35 3D E0 0A4C 57      CLI MPLXX,X'E0' CURRENT MALT -E0- ?
0A39 F2 81 07 58      JE ALTER JUMP IF SO.
59 *****
0A3C 3C E0 0A4C 60      MVI MPLXX,X'E0' SET UP FOR MALT -E0-.
0A40 F2 87 04 61      J **7
0A43 3C E1 0A4C 62 ALTER MVI MPLXX,X'E1' SET UP FOR MALT -E1-.
63 *****
0A47 C0 87 0222 64      B MALT INLINE MALT -E0- OR -E1-.
0A4B 40E1 0A4C 65 MPLXX DC XL2'40E1'
66 *****
0A4D C0 87 0A11 67      B BEGINN REPEAT IF NO SYSTEM RESET.

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
69 *****
70 * RTN01 *
71 *****
72 *
73 * ROUTINE 01      TEST DATA BYTE TRANSFER. BYTE = 10.
74 *
75 *****
0A51 01 0A51 76 RTN01 DC XL1'01'      ROUTINE NUMBER.
0A52 00 0A52 77      DC XL1'00'      NO MANUAL INTERVENTION REQUIRED.
0A53 0A62 0A54 78      DC AL2(RTN02)    ROUTINE 02 ADDRESS.
79 *****
0A55 C0 87 180B 80      B DATA GO DO DATA TRANSFER TEST.
0A59 C4 0A59 81      DC XL1'04'      -CONTROL CODE.
0A5A 0810 0A5B 82      DC XL2'0810'     -EXPECTED DIAG-DTR.
0A5C C1F1 0A5D 83      DC XL2'C1F1'     -EXPECTED STATUS-LCR.
0A5E 9371 0A5F 84      DC XL2'9371'     -MAP REFERENCE FOR SENSE CHECK.
0A60 40 0A60 85      DC XL1'40'      -SENSE CHECK MALT.
0A61 41 0A61 86      DC XL1'41'      -BYTE CHECK MALT.
87 *****
88 *****
89 *****
90 * RTN02 *
91 *****
92 *
93 * ROUTINE 02      TEST DATA BYTE TRANSFER. BYTE = 40.
94 *
95 *****
0A62 02 0A62 96 RTN02 DC XL1'02'      ROUTINE NUMBER
0A63 00 0A63 97      DC XL1'00'      NO MANUAL INTERVENTION REQUIRED
0A64 0A73 0A65 98      DC AL2(RTN03)    ROUTINE 03 ADDRESS
99 *****
0A66 C0 87 180B 100     B DATA GO DO DATA TRANSFER TEST.
0A6A D0 0A6A 101     DC XL1'D0'      -CONTROL CODE.
0A6B 0840 0A6C 102     DC XL2'0840'     -EXPECTED DIAG-DTR.
0A6D C1F1 0A6E 103     DC XL2'C1F1'     -EXPECTED STATUS-LCR.
0A6F 9441 0A70 104     DC XL2'9441'     -MAP REFERENCE FOR SENSE CHECK.
0A71 42 0A71 105     DC XL1'42'      -SENSE CHECK MALT.
0A72 43 0A72 106     DC XL1'43'      -BYTE CHECK MALT.
107 *****
108 *****
109 *****
110 * RTN03 *
111 *****
112 *
113 * ROUTINE 03      TEST DATA BYTE TRANSFER. BYTE =40.
114 *
115 *****
0A73 03 0A73 116 RTN03 DC XL1'03'      ROUTINE NUMBER
0A74 00 0A74 117     DC XL1'00'      NO INTERVENTION REQUIRED
0A75 0A84 0A76 118     DC AL2(RTN04)    ROUTINE 04 ADDRESS
119 *****
0A77 C0 87 180B 120     B DATA GO DO DATA TRANSFER TEST.
0A7B E8 0A7B 121     DC XL1'E8'      -CONTROL CODE.
0A7C 08A0 0A7D 122     DC XL2'08A0'     -EXPECTED DIAG-DTR.
0A7E C1F1 0A7F 123     DC XL2'C1F1'     -EXPECTED STATUS-LCR.
0A80 9461 0A81 124     DC XL2'9461'     -MAP REFERENCE FOR SENSE CHECK.
0A82 44 0A82 125     DC XL1'44'      -SENSE CHECK MALT.
0A83 45 0A83 126     DC XL1'45'      -BYTE CHECK MALT.

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4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		128	*****	
		129	* RTN04 *	
		130	*****	
		131	*	
		132	* ROUTINE 04	TEST DATA BYTE TRANSFER. BYTE = 05.
		133	*	
		134	*****	
0A84 04	0A84	135	RTN04 DC	XL1'04' ROUTINE NUMBER
0A85 00	0A85	136	DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
0A86 0A95	0A87	137	DC	AL2(RTN05) ROUTINE 05 ADDRESS
		138		
0A88 C0 87 180B		139	B	DATA GO DO DATA TRANSFER TEST.
0A8C E1	0A8C	140	DC	XL1'E1' -CONTROL CODE.
0A8D 0805	0A8E	141	DC	XL2'0805' -EXPECTED DIAG-DTR.
0A8F C1F1	0A90	142	DC	XL2'C1F1' -EXPECTED STATUS-LCR.
0A91 9481	0A92	143	DC	XL2'9481' -MAP REFERENCE FOR SENSE CHECK.
0A93 46	0A93	144	DC	XL1'46' -SENSE CHECK HALT.
0A94 47	0A94	145	DC	XL1'47' -BYTE CHECK HALT.
		146		
		147		
		148	*****	
		149	* RTN05 *	
		150	*****	
		151	*	
		152	* ROUTINE 05	TEST DATA BYTE TRANSFER. BYTE = 0A.
		153	*	
		154	*****	
0A95 05	0A95	155	RTN05 DC	XL1'05' ROUTINE NUMBER
0A96 00	0A96	156	DC	XL1'00' NO MANUAL INTERVENTION
0A97 0AA6	0A98	157	DC	AL2(RTN06) ROUTINE 06 ADDRESS
		158		
0A99 C0 87 180B		159	B	DATA GO DO DATA TRANSFER TEST.
0A9D E2	0A9D	160	DC	XL1'E2' -CONTROL CODE.
0A9E 080A	0A9F	161	DC	XL2'080A' -EXPECTED DIAG-DTR.
0AA0 C1F1	0AA1	162	DC	XL2'C1F1' -EXPECTED STATUS-LCR.
0AA2 9501	0AA3	163	DC	XL2'9501' -MAP REFERENCE FOR SENSE CHECK.
0AA4 48	0AA4	164	DC	XL1'48' -SENSE CHECK HALT.
0AA5 49	0AA5	165	DC	XL1'49' -BYTE CHECK HALT.
		166		
		167		
		168	*****	
		169	* RTN06 *	
		170	*****	
		171	*	
		172	* ROUTINE 06	TEST BUSY AFTER DOING SID CONTROL 1.
		173	*	
		174	*****	
0AA6 06	0AA6	175	RTN06 DC	XL1'06' ROUTINE NUMBER
0AA7 00	0AA7	176	DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
0AA8 0AE2	0AA9	177	DC	AL2(RTN07) ROUTINE 07 ADDRESS
		178		
0AAA C0 87 021A		179	B	PRINT PRINT BUSY TEST HEADING.
0AAE 45	0AAE	180	DC	XL1'45' -CONTROL CODE.
0AAF 15	0AAF	181	DC	IL1'21' -EXPECTED DIAG-DTR.
0AB0 1CC6	0AB1	182	DC	AL2(HD06) -EXPECTED STATUS-LCR.
0AB2 40A6	0AB3	183	DC	XL2'40A6' -MAP REFERENCE FOR SENSE CHECK.
		184		
0AB4 C0 87 145C		185	B	INITL INITIALIZE THE 3741.
		186		
0AB8 C0 87 1511		187	B	QUES TEST FOR SSW 10.
0ABC F0 3C 3C		188	HPL	X'3C',X'3C' HALT --FF-- IF ON.
		189		
0ABF 31 41 1A30		190	LIO	H0000,X'41' CLEAR FUNCTION REGISTER.
0AC3 31 42 1A30		191	LIO	H0000,X'42' CLEAR LENGTH COUNT REGISTER.
0AC7 31 44 1A62		192	LIO	ADRS,X'44' LOAD ADDRESS INTO DATA ADRS REG.
0ACB 31 45 1A30		193	LIO	H0000,X'45' CLEAR DATA TRANSFER REGISTER.
		194		
0ACF F3 43 00		195	SIO	X'00',X'43' ISSUE START I/O CONTROL 1.

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		0AD2 C1 42 0ADA	196	TIO ISBSY,X'42' BRANCH IF BUSY AS EXPECTED.
		0AD6 C0 87 14AB	197	B NTBSY GO TO ERROR MESSAGE IF NOT BUSY.
		0ADA C1 42 1491	198	ISBSY TIO BUSY,X'42' BRANCH TO ERROR IF BUSY STILL ON.
			199	
		0ADE C0 87 0216	200	B LINK RETURN TO DCP.
			201	
			202	
			203	*****
			204	* RTN07 *
			205	*****
			206	*
			207	* ROUTINE 07
			208	TEST SINGLE CHARACTER TRANSFER WITH
			209	A WRITE CALL COMMAND.
			210	*****
0AE2 07	0AE2	211	RTN07 DC	XL1'07' ROUTINE NUMBER
0AE3 00	0AE3	212	DC	XL1'00' NO MANUAL INTERVENTION REQUIRED
0AE4 0B97	0AE5	213	DC	AL2(RTN08) ROUTINE 08 ADDRESS
		214		
0AE6 C0 87 021A		215	B	PRINT PRINT WRITE TRANS TEST HEADING.
0AEA 45	0AEA	216	DC	XL1'45' -CONTROL CODE.
0AEB 25	0AEB	217	DC	IL1'37' -EXPECTED DIAG-DTR.
0AEC 1CB1	0AED	218	DC	AL2(HD07) -EXPECTED STATUS-LCR.
0AEE 40A7	0AEF	219	DC	XL2'40A7' -MAP REFERENCE FOR SENSE CHECK.
		220		
0AF0 C0 87 145C		221	B	INITL INITIALIZE THE 3741.
		222		
0AF4 C0 87 1511		223	B	QUES TEST FOR SSW 10.
0AF8 F0 3C 3C		224	HPL	X'3C',X'3C' HALT --FF-- IF ON.
		225		
0AFB 31 41 1A34		226	LIO	H0002,X'41' SET FNCT REG TO 6 USEC RESET.
0AFF 31 42 1A50		227	LIO	H00FF,X'42' LOAD LENGTH COUNT REG. TO FF.
0B03 31 44 1A62		228	LIO	ADRS,X'44' LOAD ADDRESS IN DATA ADRS REG.
0B07 3C AA 1998		229	MVI	DADATA,X'AA' INITIALIZES 0ADATA TO A X'AA'.
0B0B 31 41 1A58		230	LIO	H80B2,X'41' SET 3741 TO DIAGNOSTIC MODE.
		231		
0B0F F3 42 00		232	SIO	X'00',X'42' ISSUE A WRITE CALL.
0B12 F3 44 40		233	SIO	X'40',X'44' ISSUE CONTROL 2. I/O SELECT 13
0B15 F3 44 40		234	SIO	X'40',X'44' - FORCES SERVICE REQUEST.
0B18 30 45 0B5C		235	SNS	SS07A,X'45' SENSE DIAGNOSTIC/DATA TRANS -2500-
0B1C 3C 00 0B5C		236	MVI	SS07A,X'00' CLEAR DATA TRANS REG.
		237		
0B20 0D 01 0B5C 0B5A		238	CLC	SS07A(2),SS07A-2 DIAGNOSTIC/DATA TRANS AS EXPECTED ?
0B26 F2 01 21		239	JNE	ER07A JUMP IF NOT.
		240		
0B29 F3 44 80		241	SIO	X'80',X'44' DO CONTROL 2 TO CAUSE EOT.
0B2C 30 42 0B80		242	SNS	SS07B,X'42' SENSE STATUS/LENGTH COUNT FOR -E100-
0B30 30 45 0B85		243	SNS	SS07C,X'45' SENSE DIAGNOSTIC/DATA TRANS -00AA-
		244		
0B34 0D 01 0B85 0B83		245	CLC	SS07C(2),SS07C-2 DIAGNOSTIC/DATA TRANS AS EXPECTED ?
0B3A F2 01 31		246	JNE	ERR07 JUMP IF NOT.
0B3D 0D 01 0B80 0B7E		247	CLC	SS07B(2),SS07B-2 STATUS/LENGTH COUNT AS EXPECTED ?
0B43 F2 01 28		248	JNE	ERR07 JUMP IF NOT.
		249		
0B46 C0 87 0216		250	B	LINK RETURN TO DCP.
		251		
		252	*	ROUTINE 07 ERROR MESSAGES *
		253		
0B4A C0 87 021A		254	ER07A B	PRINT PRINT RESPONSE CHECK.
0B4E C2	0B4E	255	DC	XL1'C2' -CONTROL CODE.
0B4F 17	0B4F	256	DC	IL1'23' -EXPECTED DIAG-DTR.
0B50 1E07	0B51	257	DC	AL2(SRVCK) -EXPECTED STATUS-LCR.
0B52 40AA	0B53	258	DC	XL2'40AA' -MAP REFERENCE FOR SENSE CHECK.
		259		
0B54 C0 87 1699		260	B	ERROR DUMP DIAGNOSTIC/DATA TRANS REG.
0B58 05	0B58	261	DC	XL1'05' -CONTROL CODE.
0B59 250C	0B5A	262	DC	XL2'2500' -EXPECTED.
0B5B 0000	0B5C	263	SS07A DC	XL2'0000' -ACTUAL.

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0B5D	FF	0B5D	264	DC	XL1'FF'
0B5E	C0 87 14EA		265	B	MAPS
0B62	9541	0B63	266	DC	XL2'9541'
0B64	C0 87 0222		267	B	HALT
0B68	404A	0B69	268	DC	XL2'404A'
0B6A	C0 87 0216		269	B	LINK
			270		
0B6E	C0 87 021A		271	ERR07 B	PRINT
0B72	C2	0B72	272	DC	XL1'C2'
0B73	1B	0B73	273	DC	IL1'27'
0B74	1DDF	0B75	274	DC	AL2(WRTCK)
0B76	404C	0B77	275	DC	XL2'404C'
			276		
0B78	C0 87 1699		277	B	ERROR
0B7C	02	0B7C	278	DC	XL1'02'
0B7D	E300	0B7E	279	DC	XL2'E300'
0B7F	0000	0B80	280	SS07B DC	XL2'0000'
0B81	05	0B81	281	DC	XL1'05'
0B82	00AA	0B83	282	DC	XL2'00AA'
0B84	0000	0B85	283	SS07C DC	XL2'0000'
0B86	FF	0B86	284	DC	XL1'FF'
0B87	C0 87 14EA		285	B	MAPS
0B88	9542	0B8C	286	DC	XL2'9542'
0B8D	C0 87 0222		287	B	HALT
0B91	404C	0B92	288	DC	XL2'404C'
0B93	C0 87 0216		289	B	LINK
			290		
			291		
			292	*****	
			293	* RTN08 *	
			294	*****	
			295	*	
			296	* ROUTINE 08	CHECK FOR SERVICE RESPONSE RESET
			297	*	AFTER 6 USEC.
			298	*	
			299	*****	
0B97	08	0B97	300	RTN08 DC	XL1'08'
0B98	00	0B98	301	DC	XL1'00'
0B99	0C4F	0B9A	302	DC	AL2(RTN09)
			303		
0B9B	C0 87 021A		304	B	PRINT
0B9F	45	0B9F	305	DC	XL1'45'
0BA0	29	0BA0	306	DC	IL1'41'
0BA1	1C8C	0BA2	307	DC	AL2(HD08)
0BA3	40A9	0BA4	308	DC	XL2'40A9'
			309		
0BA5	C0 87 145C		310	B	INITL
			311		
0BA9	C0 87 1511		312	B	QUES
0BAD	F0 3C 3C		313	HPL	X'3C'.X'3C'
			314		
0BB0	31 41 1A48		315	LIO	H00B2.X'41'
0BB4	31 42 1A30		316	LIO	H00C0.X'42'
0BB8	31 44 1A66		317	LIO	ADR500.X'44'
0BBC	31 45 1A30		318	LIO	H0C00.X'45'
0BC0	31 41 1A44		319	LIO	H4190.X'41'
			320	*	
			321	*	
			322	*	
			323	*	
0BC4	F3 42 00		324	SIO	X'00'.X'42'
0BC7	F3 44 40		325	SIO	X'40'.X'44'
0BCA	F3 44 40		326	SIO	X'40'.X'44'
0BCD	30 43 0C19		327	SNS	SS14A.X'43'
0BD1	30 43 0C19		328	SNS	SS14A.X'43'
			329	*	
			330	*	
			331	*	

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0BD5	30 45 0C3D		332	SNS	SS14B.X'45'
			333		SENSE DIAGNOSTIC/DATA TRANS -0500-
0BD9	0D 01 0C19 0C17		334	CLC	SS14A(2).SS14A-2
0BDF	F2 01 00		335	JNE	ER14A
0BE2	0D 01 0C3D 0C3B		336	CLC	SS14B(2).SS14B-2
0BE8	F2 01 40		337	JNE	ER14
			338		DID SERV RESP SET TRL 3 LATCH ?
			339	B	LINK
			340		JUMP IF NOT.
			341		DID SERVICE RESPONSE RESET ?
			342		JUMP IF NOT.
			343		RETURN TO DCP.
			344		
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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	TEST FOR SSW 10. HALT -FF- IF ON. SET FNCT REG TO 6 USEC RESET. LOAD -F0- IN THE LENGTH COUNT REG. LOAD BYTE -00- ADDRESS IN DAR. CLEAR DATA TRANSFER REGISTER. SET 3741 TO DIAGNOSTIC MODE OF OP. ISSUE A WRITE CALL. DO CONTROL 2. I/O SELECT 13. - FORCES SERVICE REQUEST. DO A DUMMY SENSE TO STALL. SENSE TRANS LINES FOR -FF04-. TRANS LINES AS EXPECTED ? RETURN TO DCP IF S0. PRINT DRIVER CHECK. DUMP I/O TRANSFER LINES. -EXPECTED. -ACTUAL. POINT TO MAP CHART. -PAGE 958, ENTRY 3. ERROR HALT -50-. RETURN TO DCP. ***** * RTNOA * ***** ROUTINE 0A TRANSFER 3 DATA BYTES TO CHECK THE COUNTERS AND ADDRESSES FOR INCREMENTING. ***** ROUTINE NUMBER NO MANUAL INTERVENTION REQUIRED ROUTINE 0C ADDRESS PRINT TRANSFER 3 BYTES HEADING. INITIALIZE THE 3741. TEST FOR SSW 10. HALT -FF- IF ON. SET FNCT REG FOR 6 USEC RESET. LOAD DATA BYTE ADDRESS IN DAR. CLEAR DATA TRANSFER REGISTER. LOAD -FB- IN LENGTH COUNT REG. PUT 3741 IN DIAGNOSTIC MODE.
OC61	CO 87 1511	400	B	QUES	
OC65	FO 3C 3C	401	HPL	X'3C',X'3C'	
OC68	31 41 1A34	402	LIO	H0002,X'41'	
OC6C	31 42 1A52	403	LIO	H00F0,X'42'	
OC70	31 44 1A66	404	LIO	ADRS00,X'44'	
OC74	31 45 1A30	405	LIO	H0000,X'45'	
OC78	31 41 1A40	406	LIO	H0080,X'41'	
OC7C	F3 42 00	407	SIO	A'00',X'42'	
OC7F	F3 44 40	408	SIO	X'40',X'44'	
OC82	F3 44 40	409	SIO	X'40',X'44'	
OC85	30 43 0CA9	410	SNS	SS15A,X'43'	
OC89	30 43 0CA9	411	SNS	SS15A,X'43'	
OC8D	0D 01 0CA9 0CA7	412	CLC	SS15A(2),SS15A-2	
OC93	CO 81 0216	413	BE	LINK	
OC97	CO 87 021A	414	B	PRINT	
OC9B	C2	415	DC	XL1'C2'	
OC9C	1E	416	DC	IL1'30'	
OC9D	1E46	417	DC	AL2(DRIVCK)	
OC9F	4050	418	DC	XL2'4050'	
OCA1	CO 87 1699	419	B	ERROR	
OCA5	03	420	DC	XL1'03'	
OCA6	FF04	421	DC	XL2'FF04'	
OCA8	0000	422	DC	XL2'0000'	
OC9A	FF	423	DC	XL1'FF'	
OCAB	CO 87 14EA	424	B	MAPS	
OCAC	9563	425	DC	XL2'9563'	
OCB1	CO 87 0222	426	B	HALT	
OCB5	4050	427	DC	XL2'4050'	
OCB7	CO 87 0216	428	B	LINK	
OCBB	0A	429	DC	XL1'0A'	
OCBC	00	430	DC	XL1'00'	
OCBD	0E0C	431	DC	AL2(RTN0B)	
OCBF	CO 87 021A	432	B	PRINT	
OCC3	45	433	DC	XL1'45'	
OCC4	19	434	DC	IL1'25'	
OCC5	1C46	435	DC	AL2(HD0A)	
OCC7	40AA	436	DC	XL2'40AA'	
OCC9	CO 87 145C	437	B	INITL	
OCCD	CO 87 1511	438	B	QUES	
CCD1	FO 3C 3C	439	HPL	X'3C',X'3C'	
CCD4	31 41 1A34	440	LIO	H0002,X'41'	
CCD8	31 44 1A62	441	LIO	ADRS,X'44'	
CCDC	31 45 1A30	442	LIO	H0000,X'45'	
CCED	31 42 1A5C	443	LIO	H00FB,X'42'	
CE4	31 41 1A40	444	LIO	H0080,X'41'	

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	ISSUE A READ CALL. DO 2 CONTROL 2'S TO TRANSFER DATA BYTE -05-. SENSE DIAGNOSTIC/DATA TRANS -2305- SENSE STATUS/LENGTH COUNT FOR -81FC- SENSE DATA ADDRESS REGISTER. DIAGNOSTIC/DATA TRANS AS EXPECTED ? JUMP IF NOT. STATUS/LENGTH COUNT AS EXPECTED ? JUMP IF NOT. DATA ADDRESS REGISTER INCREMENT ? JUMP IF NOT. DO 2 CONTROL 2'S TO TRANSFER DATA BYTE -0A-. SENSE DIAGNOSTIC/DATA TRANS -230A- SENSE STATUS/LENGTH COUNT -81FD- SENSE DATA ADDRESS REGISTER. DIAGNOSTIC/DATA TRANS AS EXPECTED ? JUMP IF NOT. STATUS/LENGTH COUNT AS EXPECTED ? JUMP IF NOT. DATA ADDRESS REG INCREMENT ? JUMP IF NOT. DO 2 CONTROL 2'S TO TRANSFER DATA BYTE -A0-. SENSE DIAGNOSTIC/DATA TRANS -23A0- SENSE STATUS/LENGTH COUNT -81FE- SENSE DATA ADDRESS REGISTER. DIAGNOSTIC/DATA TRANS AS EXPECTED ? JUMP IF NOT. STATUS/LENGTH COUNT AS EXPECTED ? JUMP IF NOT. DATA ADDRESS REGISTER INCREMENTING ? JUMP IF NOT. RETURN TO DCP. ***** ROUTINE 0A ERROR MESSAGES * ***** PRINT CHECK, ID -51-. DUMP THESE REGISTERS- DIAGNOSTIC/DATA TRANSFER REG. -EXPECTED. -ACTUAL. STATUS/LENGTH COUNT REG. -EXPECTED. -ACTUAL. DATA ADDRESS REGISTER. -EXPECTED. -ACTUAL. POINT TO MAP CHART. -PAGE 958, ENTRY 1. ERROR HALT -51-.
OC68	31 41 1A34	468	SIO	X'00',X'41'	
OC6C	31 42 1A52	469	SIO	X'61',X'44'	
OC70	31 44 1A66	470	SIO	X'61',X'44'	
OC74	31 45 1A30	471	SNS	SS16A,X'45'	
OC78	31 41 1A40	472	SNS	SS16B,X'42'	
OC7C	F3 42 00	473	SNS	SS16C,X'44'	
OC7F	F3 44 40	474	SNS	SS16C,X'44'	
OC82	F3 44 40	475	CLC	SS16A(2),SS16A-2	
OC85	30 43 0CA9	476	JNE	ERR16	
OC89	30 43 0CA9	477	CLC	SS16B(2),SS16B-2	
OC8D	0D 01 0CA9 0CA7	478	JNE	ERR16	
OC93	CO 81 0216	479	CLC	SS16C(2),SS16C-2	
OC97	CO 87 021A	480	JNE	ERR16	
OC9B	C2	481	JNE	ERR16	
OC9C	1E	482	SIO	X'62',X'44'	
OC9D	1E46	483	SIO	X'62',X'44'	
OC9F	4050	484	SNS	SS16E,X'45'	
OCA1	CO 87 1699	485	SNS	SS16F,X'42'	
OCA5	03	486	SNS	SS16H,X'44'	
OCA6	FF04	487	CLC	SS16E(2),SS16E-2	
OCA8	0000	488	JNE	ERR16	
OC9A	FF	489	CLC	SS16F(2),SS16F-2	
OCAB	CO 87 14EA	490	JNE	ERR16	
OCAC	9563	491	CLC	SS16H(2),SS16H-2	
OCB1	CO 87 0222	492	JNE	ERR16	
OCB5	4050	493	CLC	SS16I(2),SS16I-2	
OCB7	CO 87 0216	494	JNE	ERR16	
OCBB	0A	495	SIO	X'68',X'44'	
OCBC	00	496	SIO	X'68',X'44'	
OCBD	0E0C	497	SNS	SS16I,X'45'	
OCBF	CO 87 021A	498	SNS	SS16J,X'42'	
OCC3	45	499	SNS	SS16K,X'44'	
OCC4	19	500	CLC	SS16I(2),SS16I-2	
OCC5	1C46	501	JNE	ERR16	
OCC7	40AA	502	CLC	SS16J(2),SS16J-2	
OCC9	CO 87 145C	503	JNE	ERR16	
OCCD	CO 87 1511	504	CLC	SS16K(2),SS16K-2	
CCD1	FO 3C 3C	505	JNE	ERR16	
CCD4	31 41 1A34	506	JNE	ERR16	
CCD8	31 44 1A62	507	CLC	SS16I(2),SS16I-2	
CCDC	31 45 1A30	508	CLC	SS16J(2),SS16J-2	
CCED	31 42 1A5C	509	JNE	ERR16	
CE4	31 41 1A40	510	JNE	ERR16	
OC97	CO 87 021A	511	B	LINK	
OC9B	C2	512	B	LINK	
OC9C	1E	513	B	LINK	
OC9D	1E46	514	B	LINK	
OC9F	4050	515	B	LINK	
OCA1	CO 87 1699	516	B	LINK	
OCA5	03	517	B	LINK	
OCA6	FF04	518	B	LINK	
OCA8	0000	519	B	LINK	
OC9A	FF	520	B	LINK	
OCAB	CO 87 14EA	521	B	LINK	
OCAC	9563	522	B	LINK	
OCB1	CO 87 0222	523	B	LINK	
OCB5	4050	524	B	LINK	
OCB7	CO 87 0216	525	B	LINK	
OCBB	0A	526	B	LINK	
OCBC	00	527	B	LINK	
OCBD	0E0C	528	B	LINK	
OCBF	CO 87 021A	529	B	LINK	
OCC3	45	530	B	LINK	
OCC4	19	531	B	LINK	
OCC5	1C46	532	B	LINK	
OCC7	40AA	533	B	LINK	
OCC9	CO 87 145C	534	B	LINK	
OCCD	CO 87 1511	535	B	LINK	
CCD1	FO 3C 3C	536	B	LINK	
CCD4	31 41 1A34	537	B	LINK	
CCD8	31 44 1A62	538	B	LINK	
CCDC	31 45 1A30	539	B	LINK	
CCED	31 42 1A5C	540	B	LINK	
CE4	31 41 1A40	541	B	LINK	

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
ODAE	C0 87 0DFA	536	B	E16
ODAA	C0 87 1699	537		
ODAE	05	538	B	ERROR
ODAF	230A	539	DC	XL1'05'
ODB1	0000	540	DC	XL2'230A'
ODB3	02	541	SS16E	DC XL2'0000'
ODB4	81FD	542	DC	XL1'02'
ODB6	0000	543	DC	XL2'81FD'
ODB8	04	544	SS16F	DC XL2'0000'
CDB9	199A	545	DC	XL1'04'
ODB8	0000	546	DC	AL2(DADATA+2)
ODBD	FF	547	SS16H	DC XL2'0000'
ODSE	C0 87 14EA	548	DC	XL1'FF'
ODC2	9581	549	B	MAPS
ODC4	C0 87 0222	550	DC	XL2'9581'
ODC8	4052	551	B	HALT
ODCA	C0 87 0216	552	DC	XL2'4052'
ODCE	3C 53 0E07	553	B	LINK
ODD2	C0 87 0DFA	554		
ODD6	C0 87 1699	555	ERRR16	MVI RTRN-1.X'53'
ODDA	05	556	B	E16
ODDB	23A0	557		
ODDD	0000	558	B	ERROR
ODDF	02	559	DC	XL1'05'
ODE0	81FE	560	DC	XL2'23A0'
ODE2	0000	561	SS16I	DC XL2'0000'
ODE4	04	562	DC	XL1'02'
ODE5	199B	563	DC	XL2'81FE'
ODE7	0000	564	SS16J	DC XL2'0000'
ODE9	FF	565	DC	XL1'04'
ODEA	C0 87 14EA	566	DC	AL2(DADATA+3)
ODEE	9581	567	SS16K	DC XL2'0000'
ODFO	C0 87 0222	568	DC	XL1'FF'
ODFA	4053	569	B	MAPS
ODF6	C0 87 0216	570	DC	XL2'9581'
ODFA	34 08 0E0B	571	B	HALT
ODFE	C0 87 021A	572	DC	XL2'4053'
OE02	C2	573	B	LINK
OE03	14	574		
OE04	18A6	575	E16	ST RTRN+3.ARR
OE06	4000	576	B	PRINT
OE08	C0 87 0000	577	DC	XL1'C2'
		578	DC	IL1'20'
		579	DC	AL2(SNCK)
		580	DC	XL2'4000'
		581	RTRN	B *-*
		582		
		583		
		584		*****
		585		* RTN0B *
		586		*****
		587		*
		588		* ROUTINE 0B
		589		TEST LENGTH COUNT REGISTER
		590		OVERFLOW BY READ CALL.
		591		*****
OE0C	0B	592	RTN0B	DC XL1'0B'
OE0D	00	593	DC	XL1'00'
OE0E	0ECB	594	DC	AL2(RTNOC)
		595		
OE10	C0 87 021A	596	B	PRINT
OE14	45	597	DC	XL1'45'
OE15	2F	598	DC	IL1'47'
OE16	18EC	599	DC	AL2(HDOB)
OE18	40AB	600	DC	XL2'40AB'
		601		
OE1A	C0 87 145C	602	B	INITL
		603		

4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
OE1E	C0 87 1511	604	B	QUES
OE22	F0 3C 3C	605	HPL	X'3C',X'3C'
		606		
OE25	31 41 1A34	607	LIO	H0002,X'41'
OE29	31 44 1A62	608	LIO	ADR,X'44'
OE2D	31 45 1A30	609	LIO	H0000,X'45'
OE31	31 42 1A5E	610	LIO	H00FE,X'42'
OE35	31 41 1A40	611	LIO	H0GB0,X'41'
		612		
OE39	F3 41 00	613	SIO	X'00',X'41'
OE3C	F3 44 74	614	SIO	X'74',X'44'
OE3F	F3 44 74	615	SIO	X'74',X'44'
		616		
OE42	30 42 0EBD	617	SNS	SS17B,X'42'
		618		
OE46	0D 01 0EBD 0EBB	619	CLC	SS17B(2),SS17B-2
OE4C	F2 01 2C	620	JNE	ERR17
		621		
OE4F	31 45 1A30	622	LIO	H0000,X'45'
OE53	F3 44 61	623	SIO	X'61',X'44'
OE56	F3 44 61	624	SIO	X'61',X'44'
OE59	30 45 0EB1	625	SNS	SS17C,X'45'
		626		
OE5D	30 45 0EB1	627	SNS	SS17C,X'45'
OE61	30 42 0EB6	628	SNS	SS17D,X'42'
		629		
OE65	0D 01 0EB1 0EAF	630	CLC	SS17C(2),SS17C-2
OE6B	F2 01 31	631	JNE	ERR17
OE6E	0D 01 0EB6 0EB4	632	CLC	SS17D(2),SS17D-2
OE74	F2 01 28	633	JNE	ERR17
		634		
OE77	C0 87 0216	635	B	LINK
		636		
		637		* ROUTINE 0B ERROR MESSAGES *
		638		
OE7B	C0 87 021A	639	ER17	B PRINT
OE7F	C2	640	DC	XL1'C2'
OE80	0C	641	DC	IL1'12'
OE81	1EAD	642	DC	AL2(SNSCK)
OE83	4055	643	DC	XL2'4055'
		644		
OE85	C0 87 1699	645	B	ERROR
OE89	02	646	DC	XL1'02'
OE8A	81FF	647	DC	XL2'81FF'
OE8C	0000	648	SS17B	DC XL2'0000'
OE8E	FF	649	DC	XL1'FF'
OE8F	C0 87 14EA	650	B	MAPS
OE93	9582	651	DC	XL2'9582'
OE95	C0 87 0222	652	B	HALT
OE99	4055	653	DC	XL2'4055'
OE9B	C0 87 0216	654	B	LINK
		655		
OE9F	C0 87 021A	656	ERR17	B PRINT
OEA3	C2	657	DC	XL1'C2'
OE44	0A	658	DC	IL1'10'
OE45	1E68	659	DC	AL2(CKEOT)
OE47	4056	660	DC	XL2'4056'
		661		
OE49	C0 87 1699	662	B	ERROR
OE4D	05	663	DC	XL1'05'
OE4E	0805	664	DC	XL2'0805'
OE80	0000	665	SS17C	DC XL2'0000'
OE82	02	666	DC	XL1'02'
OE83	E300	667	DC	XL2'E300'
OE85	0000	668	SS17D	DC XL2'0000'
OE87	FF	669	DC	XL1'FF'
OE88	C0 87 14EA	670	B	MAPS
OE8C	9583	671	DC	XL2'9583'

4032 3741 ATTACHMENT DATA TRANSFER TEST

4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
	0EBE C0 87 0222		672	B	HALT
	0EC2 4056	0EC3	673	DC	XL2*4056*
	0EC4 C0 87 0216		674	B	LINK

ERROR HALT -56-  
RETURN TO DCP.

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
	0EC8 DC	0EC8	683	DC	XL1*0C*
	0EC9 00	0EC9	684	DC	XL1*00*
	0ECA 0F93	0ECB	685	DC	AL2(RTNOD)
	0EE0 45	0ED0	688	DC	XL1*45*
	0ED1 30	0ED1	689	DC	IL1*48*
	0ED2 1CF6	0ED3	690	DC	AL2(MDOC)
	0ED4 40AC	0ED5	691	DC	XL2*40AC*
	0ED6 C0 87 145C		692	B	INITL
	0EDA C0 87 1511		693	B	INITL
	0EDE F0 3C 3C		694	B	INITL
	0EE1 31 41 1A48		695	B	INITL
	0EE5 31 45 1A30		696	B	INITL
	0EE9 31 42 1A50		697	B	INITL
	0EED 31 44 1A62		698	B	INITL
	0EF1 31 41 1A40		699	B	INITL
	0EF5 F3 42 00		700	B	INITL
	0EF8 F3 44 40		701	B	INITL
	0EFB F3 44 40		702	B	INITL
	0EFE 30 42 0F54		703	B	INITL
	0F02 30 45 0F4F		704	B	INITL
	0F06 0D 00 0F4E 0F4C		705	B	INITL
	0F0C F2 01 2A		706	B	INITL
	0F0F 0D 01 0F54 0F52		707	B	INITL
	0F15 F2 01 21		708	B	INITL
	0F18 F3 44 40		709	B	INITL
	0F1B 30 42 0F81		710	B	INITL
	0F23 0D 00 0F78 0F79		711	B	INITL
	0F29 F2 01 3A		712	B	INITL
	0F2C 0D 01 0F81 0F7F		713	B	INITL
	0F32 F2 01 31		714	B	INITL
	0F35 C0 87 0216		715	B	INITL
	0F39 3C 00 0F4F		716	B	INITL
	0F3D C0 87 021A		717	B	INITL
	0F41 C2		718	B	INITL
	0F42 DC		719	B	INITL
	0F43 1EAD		720	B	INITL
	0F45 4057		721	B	INITL
	0F47 C0 87 1699		722	B	INITL
	0F4B 05		723	B	INITL
	0F4C 2500		724	B	INITL
	0F4E 0000		725	B	INITL
	0F50 02		726	B	INITL
	0F51 8300		727	B	INITL
	0F53 0000		728	B	INITL
	0F55 FF		729	B	INITL
	0F56 C0 87 14EA		730	B	INITL

```

676 *****
677 * RTNOC *
678 *****
679 *
680 * ROUTINE DC TEST LCR OVERFLOW BY WRITE CALL.
681 *
682 *****
683 RTNOC DC XL1*0C* ROUTINE NUMBER
684 DC XL1*00* NO MANUAL INTERVENTION REQUIRED
685 DC AL2(RTNOD) ROUTINE OD ADDRESS
686
687 B PRINT PRINT EOT HEADING.
688 DC XL1*45*
689 DC IL1*48*
690 DC AL2(MDOC)
691 DC XL2*40AC*
692
693 B INITL INITIALIZE THE 3741.
694
695 B QUES TEST FOR SSW 10.
696 HPL X*3C*,X*3C* HALT -FF- IF ON.
697
698 LIO M0082,X*41* DD 6 USEC RESET AND PUT IN DIAG MODE
699 LIO M0000,X*45* CLEAR DATA TRANSFER REGISTER.
700 LIO M00FF,X*42* LOAD -FF- IN LENGTH COUNT REGISTER.
701 LIO MDRS,X*44* LOAD ADDRESS IN DATA ADG REG.
702 LIO M0080,X*41* SET FNCT REGISTER TO DIAG MODE.
703
704 SIO X*00*,X*42* ISSUE WRITE CALL START I/O.
705 SIO X*40*,X*44* DO CONTROL 2 SIO TWICE TO FORCE
706 SIO X*40*,X*44* - I/O CYCLE.
707 SNS SS18B,X*42* SENSE STATUS/LENGTH COUNT -8300-.
708 SNS SS18A,X*45* SENSE DIAGNOSTIC/DATA TRANS -2500-.
709
710 CLC SS18A-1(1),SS18A-3 DIAGNOSTIC BYTE AS EXPECTED ?
711 JNE ER18 JUMP IF NOT.
712 CLC SS18B(2),SS18B-2 STATUS/LENGTH COUNT AS EXPECTED ?
713 JNE ER18 JUMP IF NOT.
714
715 SIO X*40*,X*44* THIS CONTROL 2 CAUSES -OVERFLOW-.
716 SNS SS18D,X*45* SENSE DIAGNOSTIC/DATA TRANS -0800-.
717 SNS SS18E,X*42* SENSE STATUS/LENGTH COUNT REG -E300-.
718
719 CLC SS18D-1(1),SS18D-3 DIAGNOSTIC BYTE AS EXPECTED ?
720 JNE ERR18 JUMP IF NOT.
721 CLC SS18E(2),SS18E-2 STATUS/LENGTH COUNT AS EXPECTED ?
722 JNE ERR18 JUMP IF NOT.
723
724 B LINK RETURN TO DCP.
725
726 * ROUTINE DC ERROR MESSAGES *
727
728 ER18 MVI SS18A,X*00* CLEAR DATA TRANSFER REG.
729 B PRINT PRINT SENSE CHECK.
730 DC XL1*C2*
731 DC IL1*12*
732 DC AL2(SNSCK)
733 DC XL2*4057*
734
735 B ERROR
736 DC XL1*05* DUMP THESE REGISTERS-
737 DC XL2*2500* DIAGNOSTIC/DATA TRANSFER.
738 SS18A DC XL2*0000* -EXPECTED.
739 DC XL1*02* -ACTUAL.
740 DC XL2*8300* STATUS/LENGTH COUNT REG.
741 SS18B DC XL2*0000* -EXPECTED.
742 DC XL1*FF* -ACTUAL.
743 B MAPS POINT TO MAP CHART.

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4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
1078	FF	1078	880	DC XL1'FF'
1079	C0 87 14EA		881	B MAPS
107D	9603	107E	882	DC XL2'9603'
107F	C0 87 0222		883	B HALT
1083	405C	1084	884	DC XL2'405C'
1085	C0 87 0216		885	B LINK
			886	
			887	*****
			888	* RTNOE *
			889	*****
			890	*
			891	* ROUTINE OE TEST 3741 INTERRUPT CAPABILITY. *
			892	*
			893	*****
1089	0E	1089	894	RTNOE DC XL1'0E'
108A	00	108A	895	DC XL1'00'
108B	1398	108C	896	DC AL2(RTNOF)
			897	
108D	3D C5 0200		898	CLI CPU.C'E'
1091	C0 01 135F		899	BNE ADIT
1095	C0 87 021A		900	B PRINT
1099	45	1099	901	DC XL1'45'
109A	1C	109A	902	DC IL1'28'
109B	1D32	109C	903	DC AL2(MDOE)
109D	40AE	109E	904	DC XL2'40AE'
			905	
109F	C0 87 145C		906	B INITL
			907	
10A3	C2 01 1EF3		908	LA ERIAR,XR1
10A7	3C 23 17D8		909	MVI MPIAR,X'23'
10AB	3C 88 17C8		910	MVI IAR-4,X'88'
10AF	0C 01 17CA 1A46		911	MVC IAR-2(2),MAA55
10B5	C0 87 17A0		912	B CKIAR
10B9	0C 01 17CA 1A4C		913	MVC IAR-2(2),H55AA
10BF	C0 87 17A0		914	B CKIAR
10C3	0C 01 17CA 1A4E		915	MVC IAR-2(2),H0107
10C9	C0 87 17A0		916	B CKIAR
			917	
918	*			THE NEXT INSTRUCTIONS HANDLE A CERTAIN BUG WHICH BEHAVES THUS:
919	*			THE IAR 5 IS OR'D WITH THE PROG. LEVEL ARR AND THE RESULT
920	*			IS 'BRANCHED' TO BY THE CPU. THEREFORE, THE PROGRAM CALCULATES
921	*			THE VALUE OF THOSE 2 ADDRESSES OR'D TOGETHER. IT THEN PICKS
922	*			UP THE FOUR BYTES AT THAT LOCATION AND SAVES IT IN 'TEMP'.
923	*			NEXT, IT MOVES INTO THAT LOCATION A SPECIAL BRANCH
924	*			INSTRUCTION (CALLED BRNCH) SO THAT IF THAT BUG EXISTS, THE
925	*			BRANCH WILL CATCH IT. AFTER SUCCESSFUL INTERRUPTING HAS
926	*			OCCURRED, THE CODE SAVED IN 'TEMP' IS RESTORED. THE VALUE
927	*			OBTAINED BY THE OR'ING OF THOSE 2 ADDRESSES HAS 2 REQUIREMENTS:
928	*			1. THE OR'D VALUE (INCLUDING OR'ING OF PARITY BITS) MUST END
929	*			UP WITH GOOD PARITY.
930	*			2. THE OR'D VALUE MUST BE SOME ADDRESS WHICH IS BEYOND THE
931	*			INTERRUPT HANDLING ROUTINE BECAUSE THAT CODE MUST BE
932	*			EXECUTABLE WHILE THAT SPECIAL BRANCH IS MOVED IN.
933	*			
934	*			
10CD	0C 00 10DA 1A67		935	MVC SET1+1(1),INTR5-1
10D3	0C 00 10DE 1A68		936	MVC SET2+1(1),INTR5
10D9	3A 00 10E3		937	SET1 SBN CRIT+2,X'00'
10DD	3A 00 10E4		938	SET2 SBN CRIT+3,X'00'
10E1	C2 01 12F0		939	ORIT LA JUMP,XR1
10E5	1C 03 1994 03		940	MVC TEMP,3(4,XR1)
10EA	4C 03 03 1A6C		941	MVC 3(4,XR1),BRNCH
			942	
10EF	3B 80 1995		943	SBF FLAG,X'80'
10F3	35 84 1A68		944	L INTR5,IAR5
			945	
10F7	31 44 1A62		946	LIO ADRS,X'44'
10FB	31 42 1A50		947	LIO MOFF,X'42'

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
10FF	31 41 1A48		948	LIO MOFF,X'41'
			949	
1103	C0 87 1511		950	B QUES
1107	F0 3C 3C		951	MPL X'3C',X'3C'
110A	C0 87 12E0		952	B ADJST
			953	
FE2D			954	ORG X'FFFF'-X'12E0'+*
12E0			955	ORG X'12E0'
			956	*
			957	
12E0	F3 40 02		958	ADJST SIO X'02',X'40'
12E3	F3 41 00		959	SIO X'00',X'41'
12E6	F3 44 C4		960	SIO X'C4',X'44'
12E9	F3 44 C4		961	SIO X'C4',X'44'
			962	
12EC	C0 87 12F0		963	B **4
12F0	C0 87 12F4		964	JUMP B **4
12F4	C0 87 12F8		965	B **4
12F8	C0 87 12FC		966	B **4
12FC	38 80 1995		967	TBN FLAG,X'80'
1300	F2 90 61		968	JF ERIA
			969	
1303	C2 01 1F08		970	LA ERARR,XR1
1307	3C 24 17D8		971	MVI MPIAR,X'24'
130B	3C 08 17C8		972	MVI IAR-4,X'08'
130F	0C 01 17CA 1A46		973	MVC IAR-2(2),MAA55
1315	C0 87 17A0		974	B CKIAR
1319	0C 01 17CA 1A4C		975	MVC IAR-2(2),H55AA
131F	C0 87 17A0		976	B CKIAR
1323	0C 01 17CA 1A4E		977	MVC IAR-2(2),H0107
1329	C0 87 17A0		978	B CKIAR
			979	
132D	C0 87 145C		980	B INITL
			981	
1331	3B 80 1995		982	SBF FLAG,X'80'
1335	35 84 1A68		983	L INTR5,IAR5
			984	
1339	F3 40 12		985	SIO X'12',X'40'
			986	
133C	C0 87 1340		987	B **4
1340	C0 87 1344		988	B **4
1344	C0 87 1348		989	B **4
1348	C0 87 134C		990	B **4
			991	
134C	38 80 1995		992	TBN FLAG,X'80'
1350	F2 90 11		993	JF ERIA
			994	
1353	F3 40 0D		995	SIO X'0D',X'40'
1356	35 01 10E4		996	L CRIT+3,XR1
135A	4C 03 03 1994		997	MVC 3(4,XR1),TEMP
135F	C0 87 022A		998	ADIT B LOAD
1363	00	1363	999	DC XL1'00'
			1000	
			1001	* ROUTINE OE ERROR MESSAGE *
			1002	
1364	C0 87 021A		1003	ERIA B PRINT
1368	C2	1368	1004	DC XL1'C2'
1369	17	1369	1005	DC IL1'23'
136A	1E7F	136A	1006	DC AL2(NOINT)
136C	405E	136D	1007	DC XL2'405E'
136E	4C 03 03 1994		1008	MVC 3(4,XR1),TEMP
1373	C0 87 14EA		1009	B MAPS
1377	9622	1378	1010	DC XL2'9622'
1379	C0 87 0222		1011	B HALT
137D	405E	137E	1012	DC XL2'405E'
137F	C0 87 135F		1013	B ADIT
			1014	
			1015	*****

4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		1016	*	EXPECT INTERRUPT 5 TO BRANCH HERE.
		1017	*****	*****
		1018		
1383	3A 80 1995	1019	INT5	SBN FLAG,X*20* SET INTERRUPT FLAG ON.
1387	C0 87 1388	1020	B	**4 DO A BRANCH TO SWITCH ARRS AND IARS.
1388	30 45 1397	1021	SNS	TEMP1,X*45* ISSUE SENSE TO TEST FOR PROC CHECK.
138F	F3 40 0D	1022	SIO	X*0D*,X*40* RESET INTERRUPT,RETURN TO MAIN PRGM.
1392	C0 87 1383	1023	B	INT5
1396	0000	1397	1024	TEMP1 DC XL2*0000* A SAFE PLACE TO SENSE.
		1025		
		1026	*****	*****
		1027	* RTNOF *	
		1028	*****	*****
		1029	*	
		1030	*	ROUTINE OF TEST DATA BYTE TRANSFER. BYTE = A0.
		1031	*	EXPECT TO GENERATE I/O CHECK.
		1032	*	
		1033	*****	*****
1398	0F	1398	1034	RTNOF DC XL1*0F* ROUTINE NUMBER
1399	00	1399	1035	DC XL1*00* NO MANUAL INTERVENTION REQUIRED
139A	FFFF	139B	1036	DC XL2*FFFF* LAST ROUTINE
		1037		
139C	C0 87 021A	1038	B	PRINT PRINT PARITY TEST HEADING.
13A0	45	13A0	1039	DC XL1*45*
13A1	21	13A1	1040	DC IL1*33*
13A2	1053	13A3	1041	DC AL2(HDOF)
13A4	40AF	13A5	1042	DC XL2*40AF*
		1043		
13A6	C0 87 145C	1044	B	INITL INITIALIZE THE 3741.
		1045		
13AA	C0 87 1511	1046	B	QUES TEST FOR SSW 10.
13AE	F0 3C 3C	1047	HPL	X*3C*,X*3C* HALT --FF- IF IN.
		1048		
13B1	31 41 1A34	1049	LIO	H0002,X*41* SET FNCT REG TO 6 USEC RESET.
13B5	31 42 1A52	1050	LIO	H00F0,X*42* LOAD -F0- IN LENGTH COUNT.
13B9	31 44 1A62	1051	LIO	ADRS,X*44* LOAD ADDRESS IN DATA ADRS REG.
13BD	31 41 1A40	1052	LIO	H0080,X*41* PUT 3741 IN DIAGNOSTIC MODE.
		1053		
13C1	F3 41 00	1054	SIO	X*00*,X*41* ISSUE SIO READ CALL.
13C4	F3 44 C8	1055	SIO	X*C6*,X*44* DO 2 CONTROL 2'S TO TRANSFER DATA
13C7	F3 44 C8	1056	SIO	X*C8*,X*44* AND CAUSE BAD PARITY.
		1057		
13CA	30 42 1424	1058	SNS	SS0FA,X*42* DUMMY SENSE TO STALL
13CE	30 42 1424	1059	SNS	SS0FA,X*42* SENSE STATUS/LENGTH COUNT -C9F1--
13D2	F3 43 04	1060	SIO	X*04*,X*43* FORCE EDT
13D5	00 01 1424 1422	1061	CLC	SS0FA(2),SS0FA-2 STATUS/LENGTH COUNT AS EXPECTED ?
13DB	F2 01 34	1062	JNE	ER0F1 JUMP IF NOT.
		1063		
13DE	30 43 1449	1064	SNS	SS0FB,X*43* SENSE I/O TRANSFER LINES -F8A2--
13E2	0D 01 1449 1447	1065	CLC	SS0FB(2),SS0FB-2 I/O TRANS LINES AS EXPECTED ?
13E8	F2 01 4C	1066	JNE	ER0F2 JUMP IF NOT.
		1067		
13EB	F3 40 0D	1068	CONV	SIO X*0D*,X*40* DO GENERAL 3741 RESET.
13EE	C1 40 13F7	1069	TIO	NTRST,X*40* BRANCH IF 3741 NOT MADE READY.
		1070		
13F2	C0 87 022A	1071	B	LOAD TERMINATE SECTION.
13F6	00	13F6	1072	DC XL1*00*
		1073		
		1074	*	ROUTINE OF ERROR MESSAGES *
		1075		
13F7	C0 87 021A	1076	NTRST	B PRINT PRINT 3741 NOT RESET.
13FB	C2	13FB	1077	DC XL1*C2*
13FC	12	13FC	1078	DC IL1*18*
13FD	18FE	13FE	1079	DC AL2(NORDY)
13FF	4060	1400	1080	DC XL2*4060*
1401	C0 87 14EA	1081	B	MAPS POINT TO MAP CHART.
1405	9644	1406	1082	DC XL2*9644* -PAGE 964, ENTRY 4.
1407	C0 87 0222	1083	B	HALT ERROR HALT -60--

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		140B	4060	140C 1084 DC XL2*4060*
		140D	C0 87 022A	1085 B LOAD TERMINATE SECTION.
		1411	00	1411 1086 DC XL1*00*
				1087
1412	C0 87 021A		1088	EROF1 B PRINT PRINT SENSE CHECK.
1416	C2	1416	1089	DC XL1*C2*
1417	0C	1417	1090	DC IL1*12*
141E	1EAD	1419	1091	DC AL2(SNSCK)
141A	4061	141B	1092	DC XL2*4061*
			1093	
141C	C0 87 1699		1094	B ERROR DUMP STATUS/LENGTH COUNT REG.
1420	02	1420	1095	DC XL1*02*
1421	C9F1	1422	1096	DC XL2*C9F1*
1423	0000	1424	1097	SS0FA DC XL2*0000*
1425	FF	1425	1098	DC XL1*FF*
1426	C0 87 14EA		1099	B MAPS POINT TO MAP CHART.
142A	9641	142B	1100	DC XL2*9641* -PAGE 964, ENTRY 1.
142C	C0 87 0222		1101	B HALT ERROR HALT -61--
1430	4061	1431	1102	DC XL2*4061*
1432	C0 87 022A		1103	B LOAD TERMINATE SECTION.
1436	0C	1436	1104	DC XL1*00*
			1105	
1437	C0 87 021A		1106	EROF2 B PRINT PRINT TRANSFER LINE CHECK.
143B	C2	143B	1107	DC XL1*C2*
143C	18	143C	1108	DC IL1*24*
143D	1E5E	143E	1109	DC AL2(TRLCK)
143F	4062	1440	1110	DC XL2*4062*
			1111	
1441	C0 87 1699		1112	B ERROR DUMP I/O TRANSFER LINES.
1445	03	1445	1113	DC XL1*03*
1446	F8A2	1447	1114	DC XL2*F8A2*
1448	0900	1449	1115	SS0FB DC XL2*0000*
144A	FF	144A	1116	DC XL1*FF*
144B	C0 87 14EA		1117	B MAPS POINT TO MAP CHART.
144F	9642	1450	1118	DC XL2*9642* -PAGE 964, ENTRY 2.
1451	C0 87 0222		1119	B HALT ERROR HALT -62--
1455	4062	1456	1120	DC XL2*4062*
1457	C0 87 022A		1121	B LOAD TERMINATE SECTION.
145B	00	145B	1122	DC XL1*00*
			1123	
			1124	

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
1126 *****
1127 * INITL *
1128 ***** THIS SUBROUTINE INITIALIZES THE 3741
1129 * BEFORE A TEST ROUTINE IS EXECUTED.
1130 *
1131 *****
145C 34 08 1476 1132 INITL ST INTL+3,ARR SAVE RETURN ADDRESS.
1460 31 41 1A40 1133 LIO H0080,X*41 SET FUNCTION REG TO DIAGNOSTIC MODE
1464 31 42 1A30 1134 LIO H0000,X*42 ZERO LENGTH COUNT REGISTER.
1468 31 45 1A30 1135 LIO H0000,X*45 ZERO DATA TRANSFER REGISTER.
146C F3 40 0D 1136 SIO X*0D,X*4D DD GENERAL SIO RESET TO 3741.
146F C1 40 1477 1137 TIO NTRDY,X*40 MAKE SURE 3741 IS READY BEFORE TEST.
1473 C0 87 0000 1138 INTL B *-*
1139 *
1140 *****
1141 * TIDERS *
1142 ***** SUBROUTINE PRINTS OUT TIO ERRORS.
1143 *
1144 *****
1477 C0 87 021A 1145 NTRDY B PRINT PRINT 3741 IS NOT READY.
147B C2 1478 1146 DC XL1*C2
147C 12 147C 1147 DC IL1*18
147D 1BFE 147E 1148 DC AL2(NTRDY)
147F 403E 1480 1149 DC XL2*403E
1481 C0 87 14EA 1150 B MAPS POINT TO MAP CHART.
1485 9071 1486 1151 DC XL2*9071 -PAGE 907, ENTRY 1.
1487 C0 87 0222 1152 B HALT ERROR HA/T -3E-.
1488 403E 148C 1153 DC XL2*403E
148D C0 87 0216 1154 B LINK RETURN TO DCP.
1155 *
1491 C0 87 021A 1156 BUSY B PRINT PRINT 3741 IS BUSY.
1495 C2 1495 1157 DC XL1*C2
1496 0D 1496 1158 DC IL1*13
1497 1C0B 1498 1159 DC AL2(BISY)
1499 403F 149A 1160 DC XL2*403F
149B C0 87 14EA 1161 B MAPS POINT TO MAP CHART.
149F 9522 14A0 1162 DC XL2*9522 -PAGE 952, ENTRY 2.
14A1 C0 87 0222 1163 B HALT ERROR HALT -3F-.
14A5 403F 14A6 1164 DC XL2*403F
14A7 C0 87 0216 1165 B LINK RETURN TO DCP.
1166 *
14AB C0 87 021A 1167 NTBSY B PRINT PRINT 3741 IS NOT BUSY.
14AF C2 14AF 1168 DC XL1*C2
14B0 11 14B0 1169 DC IL1*17
14B1 1DF0 14B2 1170 DC AL2(NOTSC)
14B3 4066 14B4 1171 DC XL2*4066
14B5 C0 87 14EA 1172 B MAPS POINT TO MAP CHART.
14B9 9521 14BA 1173 DC XL2*9521 -PAGE 952, ENTRY 1.
14BB C0 87 0222 1174 B HALT ERROR HALT -66-.
14BF 4066 14C0 1175 DC XL2*4066
14C1 C0 87 0216 1176 B LINK RETURN TO DCP.
1177 *
1178 *****
1179 * XPRNTX *
1180 ***** SUBROUTINE SETS UP ERROR PRINTING.
1181 *
1182 *****
14C5 34 08 14E9 1183 EPRNT1 ST PRIT+3,ARR STORE RETURN ADDRESS.
14C9 3C 81 14DC 1184 MVI LINE,X*B1 SET UP TO SPACE 1 LINE.
14CD F2 87 08 1185 J PRNT
14D0 34 06 14E9 1186 EPRNT2 ST PRIT+3,ARR STORE RETURN ADDRESS.
14D4 3C 82 14DC 1187 MVI LINE,X*B2 SET UP TO SPACE 2 LINES.
14DB C0 87 021A 1188 PRINT B PRINT PRINT THE ERROR MESSAGE IN *PRT*.
14DC 0D 14DC 1189 LINE DC XL1*0D
14DD 5B 14DD 1190 DC IL1*91
14DE 1F77 14DF 1191 DC AL2(PRT)
14E0 DC 5A 1F77 1F78 1192 MVC PRIT(91),PRT+1 CLEAR ERROR MESSAGE AREA.
14E6 C0 87 0000 1193 PRIT B *-* RETURN TO ROUTINE.

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
1195 *****
1196 * MAPS *
1197 ***** THE MAP CHART REFERENCE IS PRINTED.
1198 *
1199 *****
14EA 34 08 1994 1200 MAPS ST TEST,ARR STORE THE ARR ADDRESS.
14EE 35 01 1994 1201 L TEST,XR1 LOAD XR1 WITH ARR ADDRESS.
14F2 18 02 1C22 00 1202 MNZ MAPSS-11,0(,XR1) LOAD HUNDREDS DIGIT FOR PAGE #.
14F7 18 03 1C23 00 1203 MNN MAPSS-10,0(,XR1) LOAD TENS DIGIT FOR PAGE #.
14FC 18 02 1C24 01 1204 MNZ MAPSS-9,1(,XR1) LOAD UNITS DIGIT FOR PAGE #.
1501 18 03 1C2C 01 1205 MNN MAPSS-1,1(,XR1) LOAD ENTRY NUMBER.
1506 C0 87 021A 1206 B PRINT PRINT GO TO MAP CHART XX.
150A 86 150A 1207 DC XL1*86
150B 22 150B 1208 DC IL1*34
150C 1C2D 150D 1209 DC AL2(MAPSS)
1210 *
150E D0 87 02 1211 B 2(,XR1) RETURN TO ROUTINE.
1212 *
1213 *****
1214 * QUES *
1215 ***** SUBROUTINE DETERMINES IF SSW 10 IS ON.
1216 *
1217 *****
1511 34 08 1525 1218 QUES ST QS+3,ARR STORE RETURN ADDRESS.
1515 38 80 020A 1219 TBN SBYTE2,SSW10 SSW 10 ON ?
1519 F2 10 0A 1220 JT QST RETURN TO PRGM HALT IF YES.
151C 0E 01 1525 1A36 1221 ALC QS+3(2),N003 INCR RETURN TO SKIP HALT.
1522 C0 87 0000 1222 QS B *-* RETURN TO ROUTINE.
1223 *
1526 3D C2 0200 1224 QST CL1 X*0200,X*C2 IS THIS A MODEL B SYSTEM ?
152A C0 01 1522 1225 BNE QS DO NORMAL HALT IF NOT.
152E 35 01 1525 1226 L QS+3,XR1 SET UP MODEL B HALT -FF-.
1532 4C 01 02 1A3E 1227 MVC 2(2,XR1),MFFF8
1537 C0 87 1522 1228 B QS GO HALT.
1229 *
1230 *****
1231 * CKPAT *
1232 ***** SUBROUTINE COMPARES ACTUAL SENSE
1233 * PATTERN VS A TABLE OF EXPECTED
1234 * PATTERNS AND PRINTS THE CORR ERROR
1235 * MESSAGE.
1236 *
1237 *****
153B 34 08 1560 1238 CKPAT ST PATCK+3,ARR STORE RETURN ADDRESS.
153F C2 01 1994 1239 LA PATRN,XR1 STORE PATTERN TABLE ADDR.
1240 *
1543 4D 05 06 1994 1241 CKS CLC 6(6,XR1),TEST COMPARE TABLE PATTERN VS ACTUAL.
1548 F2 01 16 1242 JNE TRY JUMP IF NO COMPARE.
1243 *
1548 18 02 1EC8 07 1244 MNZ MSS-2,7(,XR1) STORE TENS DIGIT OF MESSAGE ID.
1550 18 03 1EC9 07 1245 MNN MSS-1,7(,XR1) STORE UNITS DIGIT OF MESSAGE ID.
1555 C0 87 021A 1246 ERMS B PRINT PRINT CORR ERROR MESSAGE.
1559 82 1559 1247 DC XL1*82
155A 0E 155A 1248 DC IL1*14
155B 1ECA 155C 1249 DC AL2(MSS)
155D C0 87 0000 1250 PATCK B *-* RETURN TO ROUTINE.
1251 *
1561 36 01 1A3A 1251 TRY A N007,XR1 INCREMENT THE TABLE POINTERS.
1565 7D FF 01 1252 CL1 1(,XR1),X*FF END OF TABLE YET ?
1568 C0 01 1543 1253 BNE CKS CONTINUE IF NOT.
1254 *
1255 *
156C 0C 01 1EC9 1A6E 1255 MVC MSS-1(2),C21 SET UP ID FOR NO PATTERN.
1572 C0 87 1555 1256 B ERMS GO PRINT THIS.
1257 *

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
16F6	F2 01 0C	1395	JNE	**15
16F9	0C 0E 1F46 1B19	1396	MVC	PRT-42(15),NCDS5A * DIAGNOSTIC-DTR.
16FF	0C 10 1F58 1B2A	1397	MVC	PRT-28(17),NCDS5B
1705	3D 08 1698	1398	CLI	NCOD,X*08*
1709	F2 01 06	1399	JNE	**9
170C	0C 08 1F50 1EFF	1400	MVC	PRT-39(12),NCDS8 * ARR REGISTER.
1712	3D 08 1698	1401	CLI	NCOD,X*88*
1716	F2 01 06	1402	JNE	**9
1719	0C 0D 1F51 1EEC	1403	MVC	PRT-38(14),NCDS8 * IAR 5 REGISTER.
171F	C0 87 14D0	1404	B	EPRNT2 PRINT BYTE ID'S.
1405				
1723	0C 09 1F43 1B74	1406	MVC	PRT-52(10),EB2 BUILD EB BYTE HEADINGS.
1729	0C 09 1F57 1B7E	1407	MVC	PRT-32(10),EB1
172F	C0 87 14C5	1408	B	EPRNT1 PRINT EB BYTE HEADINGS.
1733	0C 0E 1F46 1B5A	1409	MVC	PRT-49(15),BITS BUILD BIT LABEL HEADINGS.
1739	0C 0E 1F5A 1B5A	1410	MVC	PRT-29(15),BITS
173F	C0 87 14D0	1411	B	EPRNT2 PRINT BIT LABEL HEADINGS.
1743	36 01 1A34	1412	A	N002,XR1
1747	34 01 1750	1413	ST	**9,XR1
1748	0C 01 1577 0000	1414	MVC	XPT(2),*-*
1751	36 01 1A34	1415	A	N002,XR1
1755	34 01 175E	1416	ST	**9,XR1
1759	0C 01 1579 0000	1417	MVC	ACT(2),*-*
1418				
175F	C2 02 1F46	1419	LA	PRT-49,XR2 STORE OUTPUT ADDRESSES.
1763	C2 01 1F5A	1420	LA	PRT-29,XR1
1767	C0 87 161C	1421	B	BITSNF GO CALCULATE STATUS OF ACTUAL BYTES.
1768	1579	176C 1422	DC	AL2(ACT)
176D	C0 87 14C5	1423	B	EPRNT1
1771	0D 01 1577 1579	1424	CLC	XPT(2),ACT PRINT STATUS/REGISTER ID.
1777	F2 81 0A	1425	JE	SKPER EXPECTED AND ACTUAL EQUAL ?
177A	0C 0A 1F33 1A80	1426	MVC	PRT-68(11),ERS JUMP IF SD.
1780	C0 87 157A	1427	B	CMPARE
1784	C0 87 14D0	1428	B	SKPER GO CALCULATE ERROR BITS.
1429				
1788	35 01 175E	1430	L	XYR1+5,XR1 RESTORE XR1.
178C	36 01 1A32	1431	A	N001,XR1
1790	C0 87 16A1	1432	B	CKIT GO CHECK FOR NEXT BYTE.
1794	36 01 1A32	1433	A	CKOUT INCREMENT RETURN ADDRESS.
1798	34 01 179F	1434	ST	**7,XR1 RETURN TO ROUTINE.
179C	C0 87 0000	1435	B	*-*
1436				
1437	*****			
1438	* CKIAR *			
1439	*****			
1440	*			
1441	*****			
1442	CKIAR ST	CKCK+3,ARR		STORE RETURN ADDRESS.
1443	L	IAR-2,IAR5		LOAD IAR5/ARR WITH TEST PATTERN.
1444	ST	IAR,IAR5		STORE REGISTER.
1445				
1446	CLC	IAR(2),IAR-2		REGISTER AS EXPECTED ?
1447	BE	*-*		RETURN TO MAIN PROGRAM IF SD.
1448	ST	THEADR,XR1		STORE ERROR MESSAGE ADDRESS.
1449				
1450	B	PRINT		PRINT IAR5/ARR CHECK.
17BE	C2	17BE 1451	DC	XL1'C2'
17BF	15	17BF 1452	DC	IL1'21'
17C0	000C	17C1 1453	DC	AL2(*-*)
17C2	4068	17C3 1454	DC	XL2'4068'
1455				
17C4	C0 87 1699	1456	B	ERROR DUMP IAR5 OR ARR REGISTER.
17C8	00	17C8 1457	DC	XL1'00'
17C9	0000	17CA 1458	DC	XL2'0000'
17CB	0000	17CC 1459	DC	XL2'0000'
17CD	FF	17CD 1460	DC	XL1'FF'
17CE	4C 03 03 1994	1461	MVC	3(4,XR1),TEMP RESTORE SPECIAL ADDRESS CONTENTS.
17D3	C0 87 14EA	1462	B	MAPS POINT TO MAP CHART.

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
17D7	9621	17D8 1463	MPIAR DC	XL2'9621' -PAGE 962, ENTRY 1.
17D9	C0 87 0222	1464	B	HALT ERROR HALT -68-
17DD	4068	17DE 1465	DC	XL2'4068'
17DF	C0 87 135F	1466	B	ADIT TERMINATE SECTION.
1467				
1468	*****			
1469	* CRCK *			
1470	*****			
1471	*			
1472	*****			
1473	ORCK B	PRINT		PRINT -OR- CHECK.
17E3	C0 87 021A	17E7 1474	DC	XL1'C2'
17E7	C2	17E8 1475	DC	IL1'20'
17E8	14	17EA 1476	DC	AL2(ORRO)
17E9	1F1C	17EC 1477	DC	XL2'4069'
17EB	4069	1478	MVC	3(4,XR1),TEMP RESTORE SPECIAL ADDRESS CONTENTS.
17ED	4C 03 03 1994	1479	B	MAPS POINT TO MAP CHART.
17F2	C0 87 14EA	17F7 1480	DC	XL2'3801' -PAGE 380, ENTRY 1.
17F6	3801	1481	B	HALT ERROR HALT -69-
17F8	C0 87 0222	17FD 1482	DC	XL2'4069'
17FC	4069	1483	B	ADIT TERMINATE SECTION.
17FE	C0 87 135F	1484		
1485	*****			
1486	* DATA *			
1487	*****			
1488	*			
1489	*			
1490	*			
1491	*			
1492	*			
1493	*			
1494	*			
1495	*			
1496	*			
1497	*			
1498	*****			
1802	00	1802 1499	CCSI02 DC	XL1'00' SIC CONTROL 2 CODE.
1803	0000	1804 1500	XPDR DC	XL2'0000' EXPECTED DIAG-DTR BYTES.
1805	0000	1806 1501	XPLCR DC	XL2'0000' EXPECTED STATUS-LCR BYTES.
1807	0000	1808 1502	MPREF DC	XL2'0000' SENSE CHECK MAP REF.
1809	0000	180A 1503	RTMLT DC	XL2'0000' HALT CODES.
1504				
180B	36 08 1A3C	1505	DATA A	N008,ARR
180F	34 08 1818	1506	ST	DATA1+5,ARR
1813	0C 08 180A 0000	1507	DATA1 MVC	RTMLT(9),*-*
1819	0C 01 1984 1808	1508	MVC	MPER(2),MPREF
181F	08 03 1837 0A03	1509	MNN	HDNGID,RTM#
1825	C0 87 021E	1510	B	UNPACK
1829	01	1829 1511	DC	IL1'1'
182A	1804	182B 1512	DC	AL2(KPDR)
182C	185A	182D 1513	DC	AL2(HDATA-1)
1514				
182E	C0 87 021A	1515	B	PRINT
1832	41	1832 1516	DC	XL1'41'
1833	24	1833 1517	DC	IL1'36'
1834	184E	1835 1518	DC	AL2(HD01)
1836	40A0	1837 1519	HDNGID DC	XL2'40A0'
1838	C0 87 021A	1520	B	PRINT
183C	05	183C 1521	DC	XL1'05'
183D	0D	183D 1522	DC	IL1'13'
183E	185B	183F 1523	DC	AL2(HDATA)
1524				
1840	C0 87 145C	1525	B	INITL INITIALIZE THE 3741
1526				
1844	0C 00 185C 1802	1527	MVC	SIOCC2+2(1),CCSI02 BUILD UP THE SIC CONTROL 2 COMMAND
184A	0C 00 185F 1802	1528	MVC	SIOCC2+5(1),CCSI02 TO CORRESPOND WITH CURRENT ROUTINE.
1850	C0 87 1511	1529	B	QUES TEST FOR SSW 10.
1854	F0 3C 3C	1530	NPL	X'3C',X'3C' HALT -FF- IF DN.

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			1531		
1857	31 41 1A34		1532	L10	H0002,X*41*
1858	31 42 1A52		1533	L10	H00F0,X*42*
185F	31 44 1A62		1534	L10	ADRS,X*44*
1863	31 41 1A40		1535	L10	H0080,X*41*
			1536		
1867	F3 41 00		1537	S10	X*00*,X*41*
186A	F3 44 00		1538	SIOCC2 S10	X*00*,X*44*
186D	F3 44 00		1539	S10	X*00*,X*44*
1870	30 45 1967		1540	SNS	SSA,X*45*
1874	30 42 196C		1541	SNS	SSB,X*42*
1878	F3 43 04		1542	S10	X*04*,X*43*
			1543		
187B	30 45 1967		1544	SNS	SSA,X*45*
187F	30 45 1967		1545	SNS	SSA,X*45*
1883	30 44 197D		1546	SNS	SSC,X*44*
			1547		
1887	0D 01 196C 1806		1548	CLC	SSB(2),XPLCR
188D	F2 01 90		1549	JNE	DATER
1890	0D 01 1967 1804		1550	CLC	SSA(2),XPDR
1896	F2 01 87		1551	JNE	DATER
1899	0D 00 1804 1998		1552	CLC	XPDR(1),DADATA
189F	F2 01 13		1553	JNE	BADBYT
18A2	3D 01 0A03		1554	CLI	RTN#,X*01*
18A6	F2 01 E2		1555	JNE	DATTA
			1556		
18A9	0D 01 197D 197B		1557	CLC	SSC(2),SSC-2
18AF	F2 01 47		1558	JNE	DARN
18B2	F2 87 D6		1559	J	DATTA
			1560		
			1561		* DATA SUBROUTINE ERROR MESSAGES *
			1562		
18B5	0C 00 18C4 180A		1563	BADBYT MVC	ERID(1),RTHLT
18BB	C0 87 021A		1564	B	PRINT
18BF	C2	18BF	1565	DC	XL1*C2*
18C0	14	18C0	1566	DC	IL1*20*
18C1	18A6	18C2	1567	DC	AL2(SNCK)
18C3	4000	18C4	1568	DC	XL2*4000*
18C5	C0 87 021A		1569	B	PRINT
18C9	82	18C9	1570	DC	XL1*82*
18CA	14	18CA	1571	DC	IL1*20*
18CB	1892	18CC	1572	DC	AL2(BYTCK)
			1573		
18CD	C0 87 021E		1574	B	UNPACK
18D1	01	18D1	1575	DC	IL1*1*
18D2	1804	18D3	1576	DC	AL2(XPDR)
18D4	18B1	18D5	1577	DC	AL2(XPAC-12)
18D6	C0 87 021E		1578	B	UNPACK
18DA	01	18DA	1579	DC	IL1*1*
18DB	1998	18DC	1580	DC	AL2(DADATA)
18DD	18BC	18DE	1581	DC	AL2(XPAC-1)
18DF	C0 87 021A		1582	B	PRINT
18E3	82	18E3	1583	DC	XL1*82*
18E4	17	18E4	1584	DC	IL1*23*
18E5	18BD	18E6	1585	DC	AL2(XPAC)
18E7	0C 00 198A 18C4		1586	MVC	ERRID(1),ERID
18ED	3C 94 1983		1587	MVI	MPER-1,X*94*
18F1	3C 23 1984		1588	MVI	MPER,X*23*
18F5	C0 87 1953		1589	B	DOFH
			1590		
18F9	0C 00 198A 1809		1591	DARN MVC	ERRID(1),RTHLT-1
18FF	0C 00 1914 1809		1592	MVC	IDER(1),RTHLT-1
1905	0C 01 1EC9 1A70		1593	MVC	MSS-1(2),C05
1908	C0 87 021A		1594	B	PRINT
190F	C2	190F	1595	DC	XL1*C2*
1910	14	1910	1596	DC	IL1*20*
1911	18A6	1912	1597	DC	AL2(SNCK)
1913	4000	1914	1598	DC	XL2*4000*

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			1599	B	PRINT
1915	C0 87 021A		1599	B	PRINT
1919	82	1919	1600	DC	XL1*82*
191A	0E	191A	1601	DC	IL1*14*
191B	1ECA	191C	1602	DC	AL2(MSS)
191D	F2 87 33		1603	J	DOFH
			1604		
1920	0C 00 1935 1809		1605	DATER MVC	ERRID(1),RTHLT-1
1926	0C 00 198A 1935		1606	MVC	ERRID(1),ERRID
192C	C0 87 021A		1607	B	PRINT
1930	C2	1930	1608	DC	XL1*C2*
1931	14	1931	1609	DC	IL1*20*
1932	18A6	1933	1610	DC	AL2(SNCK)
1934	4000	1935	1611	ERRRID DC	XL2*4000*
1936	3D 01 0A03		1612	CLI	RTN#,X*01*
193A	F2 01 16		1613	JNE	DOFH
			1614		
193D	0C 01 1990 1967		1615	MVC	TEST-4(2),SSA
1943	0C 01 1992 196C		1616	MVC	TEST-2(2),SSB
1949	0C 01 1994 197D		1617	MVC	TEST(2),SSC
			1618		
194F	C0 87 153B		1619	B	CKPAT
			1620		
1953	0C 01 1965 1804		1621	DOFH MVC	SSA-2(2),XPDR
1959	0C 01 196A 1806		1622	MVC	SSB-2(2),XPLCR
			1623		
195F	C0 87 1699		1624	B	ERROR
1963	05	1963	1625	DC	XL1*05*
1964	0000	1965	1626	DC	XL2*0000*
1966	0000	1967	1627	SSA DC	XL2*0000*
1968	02	1968	1628	DC	XL1*02*
1969	0000	196A	1629	DC	XL2*0000*
196B	0000	196C	1630	SSB DC	XL2*0000*
196D	FF	196D	1631	DC	XL1*FF*
196E	3D 01 0A03		1632	CLI	RTN#,X*01*
1972	F2 01 0A		1633	JNE	DMPY1
1975	C0 87 1699		1634	B	ERROR
1979	04	1979	1635	DC	XL1*04*
197A	1999	197B	1636	DC	AL2(DADATA+1)
197C	0000	197D	1637	SSC DC	XL2*0000*
197E	FF	197E	1638	DC	XL1*FF*
197F	C0 87 14EA		1639	DMPY1 B	MAPS
1983	0000	1984	1640	MPER DC	XL2*0000*
1985	C0 87 0222		1641	B	HALT
1989	4000	198A	1642	ERRID DC	XL2*4000*
198B	C0 87 0216		1643	DATTA B	LINK
			1644		
			1645		*****
			1646		* RESERVED *
			1647		*****
198F	000000000000	1994	1648	TEST DC	XL6*0C0000000000*
1995	00	1995	1649	FLAG DC	XL1*00*
1996	0000	1997	1650	DC	XL2*0000*
1998	00	1998	1651	DADATA DC	XL1*00*
1999	0000	199A	1652	DC	XL2*0000*
			1653		
			1654		*****
			1655		* TABLES *
			1656		*****
			1657		
			1658		* TABLE OF EXPECTED ERROR PATTERNS FOR RTN01.
			1659		
199A	1660	PATRN EQU	*-1		
	1661	*	D S		
	1662	*	I D T L		
	1663	*	A T A C		
	1664	*	G R T R		
199B	080C81F0	199E	1665	DC	XL4*080C81F0*
199F	1998	19A0	1666	DC	AL2(DADATA)





4032 3741 ATTACHMENT DATA TRANSFER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic error messages and their corresponding addresses and codes.

4032 3741 ATTACHMENT DATA TRANSFER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic error messages and their corresponding addresses and codes.

4032 3741 ATTACHMENT DATA TRANSFER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
1F04	C8C5C3D248		1821		
1F09	C9C1D9F561C1D9D9	1F1C	1822	DRRD DC	CL20 IARS/ARR -QR- CHECK.*
1F11	4060D6D96040C3C8		1822		
1F19	C5C3D248		1822		
1F1D		1F77	1823	PRT DS	CL91 PRINT FIELD.
1F78	40	1F78	1824	DC	XL1*40* CLEARING BYTE.
			1825		
			1826	*****	
			1827	* EQUATES *	
			1828	*****	
0008	1829	ARR	EQU	X*08*	
0216	1830	LINK	EQU	X*216*	
022A	1831	LOAD	EQU	X*22A*	
021A	1832	PRINT	EQU	X*21A*	
021E	1833	UNPACK	EQU	X*21E*	
00J1	1834	XR1	EQU	X*01*	
0002	1835	XR2	EQU	X*02*	
0222	1836	HALT	EQU	X*222*	
0A03	1837	RTN#	EQU	X*0A03*	
0084	1838	IARS	EQU	X*84*	
0200	1839	CPU	EQU	X*200*	
1A30	1840	H0000	EQU	N000	
1994	1841	TEMP	EQU	TEST	
1EEC	1842	NCD88	EQU	ERARR-7	
1EFF	1843	NCD08	EQU	ERARR-9	
1A34	1844	H0002	EQU	N002	
0080	1845	SSW10	EQU	X*80*	
020A	1846	SBYTE2	EQU	X*020A*	
0A07	1847	FRTN	EQU	X*0A07*	
0200	1848	SRT	EQU	X*0200*	
0A11	1849	END	BEGINN		

4032 3741 ATTACHMENT DATA TRANSFER TEST

		CROSS-REFERENCE															
SYMBOL	T	LEN	VALUE	DEFN	REFERENCES												
ACT	A	002	1579	1267	1281 1285 1290 1294 1417* 1422 1424												
ADIT	A	004	135F	0998	0899 1013 1466 1483												
ADJST	A	003	12E0	0958	0952												
ADRS	A	002	1A62	1758	0192 0228 0463 0608 0701 0796 0946 1051 1534												
ADRS00	A	002	1A66	1760	0317 0406												
ADRS55	A	002	1A64	1759													
ALTER	A	004	0A43	0062	0058												
ARR	C	001	0008	1829	0575 1132 1183 1186 1200 1218 1238 1269 1323* 1324 1327* 1328												
					1373 1442 1505* 1506												
ATTN	A	020	1EA1	1815													
BADBYT	A	006	18B5	1563	1553												
BEGIN	A	001	0A0D	0039	0015												
BEGINN	A	004	0A11	0043	0067 1849												
BISY	A	013	1C0B	1791	1159												
BITS	A	015	186A	1783	1409 1410												
BITSNF	A	004	161C	1323	1421												
BRNCH	A	002	1A6C	1763	0941												
BTNF	A	004	1678	1349	1328*												
BUSY	A	004	1491	1156	0198												
BYTCK	A	020	1892	1786	1572												
CCSID2	A	001	1802	1499	1527 1528												
CKCK	A	004	1782	1447	1442*												
CKEDT	A	010	1E68	1812	0659 0753												
CKIAR	A	004	17A0	1442	0912 0914 0916 0974 0976 0978												
CKIT	A	004	16A1	1375	1432												
CKOUT	A	004	1794	1433	1378												
CKPAT	A	004	1538	1238	1619												
CKS	A	005	1543	1241	1254												
CMPARE	A	004	157A	1269	1427												
CMPR	A	004	1502	1298	1269*												
CONY	A	003	13EB	1068													
CPU	C	001	0200	1839	0898												
C05	A	002	1A70	1765	1593												
C21	A	002	1A6E	1764	1256												
DADATA	A	001	1998	1651	0229* 0526 0546 0566 0838 0855 1552 1580 1636 1666 1669 1672												
					1675 1678 1681 1684 1687 1690 1693 1696 1699 1702 1705 1708												
					1711 1714 1717 1720 1723 1726 1758												
DARCK	A	007	180A	1778	0833												
DARN	A	006	18F9	1591	1558												
DATA	A	004	180B	1505	0080 0100 0120 0139 0159												
DATA1	A	006	1813	1507	1506*												
DATER	A	006	1920	1605	1549 1551												
DATTA	A	004	1988	1643	1555 1559												
DMPY1	A	004	197F	1639	1633												
DRIVCK	A	030	1E46	1810	0424												
EB1	A	010	187E	1785	1407												
EB1T	A	001	1618	1321	1326* 1341												
EB2	A	010	1874	1784	1406												
EB2T	A	001	161A	1320	1334												
ENTRY	A	004	1DC4	1805													
EPRNT1	A	004	14C5	1183	1408 1423												
EPRNT2	A	004	14D0	1186	1404 1411 1428												
ERARR	A	021	1F08	1821	0970 1843												
ERIAR	A	021	1EF3	1820	0908 1842												
ERID	A	002	18C4	1568	1563* 1586												
ERMS	A	004	1555	1246	1257												
ERRID	A	002	198A	1642	1586* 1591* 1606*												
ERROR	A	004	1699	1373	0260 0277 0353 0370 0427 0518 0538 0558 0645 0662 0735 0756												
					0836 0853 0873 1094 1112 1456 1624 1634												
ERRR16	A	002	1935	1611	1605* 1606												
ERRR16	A	004	0DCE	0555	0505 0507 0509												
ERRR19	A	004	1060	0867	0822 0824												
ERR07	A	004	0B6E	0271	0246 0248												
ERR16	A	004	0DA2	0535	0491 0493 0495												
ERR17	A	004	0E9F	0556	0631 0633												
ERR18	A	004	0F66	0749	0720 0722												

4032 3741 ATTACHMENT DATA TRANSFER TEST

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Rows include entries like ERR19, ERS, EROF1, etc., with various alphanumeric values and reference numbers.

4032 3741 ATTACHMENT DATA TRANSFER TEST

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Rows include entries like JUMP, LINE, LINK, etc., with various alphanumeric values and reference numbers.

4032 3741 ATTACHMENT DATA TRANSFER TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
RTNCC	A	001	0EC8	0683	0594
RTNCD	A	001	0F93	0778	0685
RTNOE	A	001	1089	0894	0780
RTNOF	A	001	1358	1034	0896
RTNO1	A	001	0A51	0076	0041 0054
RTNO2	A	001	0A62	0096	0078
RTNO3	A	001	0A73	0116	0098
RTNO4	A	001	0A84	0135	0118
RTNO5	A	001	0A85	0155	0137
RTNO6	A	001	0AA6	0175	0157
RTNO7	A	001	0AE2	0211	0177
RTNO8	A	001	0B97	0300	0213
RTNO9	A	001	0C4F	0389	0302
RTRN	A	004	0E08	0581	0515* 0535* 0555* 0575*
SBYTE2	C	001	020A	1846	1219
SET1	A	004	10D9	0937	0935*
SET2	A	004	10DD	0938	0936*
SIDCC2	A	003	186A	1538	1527* 1528*
SKPER	A	004	1784	1428	1425
SNCK	A	020	18A6	1787	0579 1567 1597 1610
SNSCK	A	012	1EAD	1816	0642 0732 0850 1091
SRT	C	001	0200	1848	
SRVCK	A	023	1E07	1808	0257
SRVR	A	033	1E28	1809	0343 0367
SSA	A	002	1967	1627	1540* 1544* 1545* 1550 1615 1621*
SSB	A	002	196C	1630	1541* 1548 1616 1622*
SSC	A	002	197D	1637	1546* 1557 1557 1617
SSW10	C	001	0080	1645	1219
SS0FA	A	002	1424	1097	1058* 1059* 1061 1061
SS0FB	A	002	1449	1115	1064* 1065 1065
SS07A	A	002	0B5C	0263	0235* 0236* 0238 0238
SS07B	A	002	0B80	0280	0242* 0247 0247
SS07C	A	002	0B85	0283	0243* 0245 0245
SS14A	A	002	0C19	0356	0327* 0328* 0334 0334
SS14B	A	002	0C3D	0373	0332* 0336 0336
SS15A	A	002	0CA9	0430	0413* 0414* 0416 0416
SS16A	A	002	0D86	0521	0472* 0476 0476
SS16B	A	002	0D88	0524	0473* 0478 0478
SS16C	A	002	0D90	0527	0474* 0480 0480
SS16E	A	002	0D82	0541	0486* 0490 0490
SS16F	A	002	0D87	0544	0487* 0492 0492
SS16H	A	002	0DBC	0547	0488* 0494 0494
SS16I	A	002	0DDE	0561	0500* 0504 0504
SS16J	A	002	0DE3	0564	0501* 0506 0506
SS16K	A	002	0DE8	0567	0502* 0508 0508
SS17B	A	002	0E8D	0648	0617* 0619 0619
SS17C	A	002	0EB1	0665	0625* 0627* 0630 0630
SS17D	A	002	0EB6	0668	0628* 0632 0632
SS18A	A	002	0F4F	0738	0708* 0710 0710 0728*
SS18B	A	002	0F54	0741	0707* 0712 0712
SS18D	A	002	0F7C	0759	0716* 0719 0719 0749*
SS18E	A	002	0F81	0762	0717* 0721 0721
SS19A	A	002	1025	0839	0802* 0803 0803
SS19B	A	002	1049	0856	0809* 0812 0812
SS19C	A	002	104E	0859	0810* 0814 0814
SS19D	A	002	1072	0876	0818* 0821 0821
SS19E	A	002	1077	0879	0819* 0823 0823
TAERR	A	004	160A	1309	1270* 1282 1286 1305*
TA1	A	004	15AF	1285	1274* 1280 1299 1299*
TA2	A	004	15A5	1281	1273* 1300 1300*
TA3	A	004	159E	1279	1272* 1301 1301* 1307
TBERR	A	004	1612	1311	1271* 1291 1295 1306*
TB1	A	004	15C7	1294	1277* 1289 1297 1302 1302*
TB2	A	004	15B0	1290	1276* 1303 1303*
TB3	A	004	15B6	1288	1275* 1283 1304 1304* 1310
TC	A	004	15CE	1297	1292 1312

DATE 16AUG74 15NOV74 16JUN75  
EC NO. 824765 824870 825057

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DATE 16AUG74 15NOV74 16JUN75  
EC NO. 824765 824870 825057

PROG ID 403-2  
PAGE 18A

4032 3741 ATTACHMENT DATA TRANSFER TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
TEMP	A	006	1994	1841	0940* 0997 1008 1461 1478
TEMP1	A	002	1397	1024	1021*
TEST	A	006	1994	1648	0344* 0345 1200* 1201 1241 1615* 1616* 1617* 1841
THEADR	A	002	17C1	1453	1448*
TNF	A	004	1648	1334	1329* 1348 1350 1350* 1354
TNFF	A	004	165E	1341	1330* 1351 1351*
TRLCK	A	024	1E5E	1811	1109
TRY	A	004	1561	1252	1242
UNPACK	C	001	021E	1833	1510 1574 1578
UPSIOC	A	030	1A8E	1770	0046
WRTCK	A	027	1DDF	1806	0274
XPAC	A	023	1BBD	1788	1577 1581 1585
XPDR	A	002	1804	1500	1512 1550 1552 1576 1621
XPLCR	A	002	1806	1501	1548 1622
XPT	A	002	1577	1266	1279 1288 1414* 1424
XR1	C	001	0001	1834	0054* 0055 0908* 0939* 0940 0941 0970* 0996* 0997 1008 1201* 1202
					1203 1204 1205 1211 1226* 1227 1239* 1241 1244 124E 1252* 1253
					1271 1332 1374* 1375 1412* 1413 1415* 1416 1420* 1430* 1431* 1433*
					1434 1448 1461 1478
XR2	C	001	0002	1835	1270 1331 1419*
XYR1	A	006	1759	1417	1430

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

4032 3741 ATTACHMENT DATA TRANSFER TEST

OBJECT CARD LISTING

THE CHARACTER \* INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+-#D/0H00H*BFXH	HGW/NXBGEZUEB M	***.T***	*@BGE+D	N-@BG SI N*BG /O	< ** =LOH*BFUMOG R
T+-@J/1J*0H*ND~	@ CEAFU-1JJYD<MH	EMCEDFWH16JZ @4M	@4J @4J <DH NCA	EC4@(''+C432 KY	( &E =2@40320022
T+-Y:8CH C B-7	**4AE D BVG /OH	E6/8ETUC-0H*BF-Q	PFDM&EA*8CEV~)1*	80-DHML&AB-#*8 Z	<@YD PA*40320001
T+-Z5A33-BU32/06	286Z<0H*BHUC/OH*	HD&D BW. /1-.1 -	EO-FL*MAA - H*@B	GF 76BDCA@RJA@U<	C Y NIH40320002
T+-D0/<6GF ?Y@RC	A@RJ/JDMD DNOM*	QB=DHA*G1VHEFJOM	BES /1-.8--H0-F	N M/IA- H@XBG /Z	EEJO R1*40320003
T+-..1UBW0H*MP<B	GEJGO C016JY0<MH	E<CEDFWH1JJY0@4<	0MH@5XBGEM?A@/K	JOH*BE-# B~ /OH	EJKN 9YU40320004
T+-Y@C.F Z@BGEES	/1MJ@C0@<MDE(CE	BFV 1JAZS HYRWCE	AFVY?~C JDC3JD	OJE_*  .P 4AE50	.07H *. 40320005
T+-/_KG3JH 06->	<DM./64AB@M.-MH	AKEA@D-?7HAKCB	G /S /OH@0/*:4A4	H@H*DM@MV ***	@B GE+Y 7HU40320006
T+->VMG /OHS&D-	/OH00H*BFXHS@G)	LKBGEZUB80 ***	H D- **@BGE+DN&E	G SI L<BG /OH **	1  OH* QH@40320007
T+-?P /ZE@J2<@RX	/1J*0H*ND~ @ CE	AFU-16/Y0<M@ERTE	EFT 16JZD@4H @4J	@4J <D<<FLACCAU	OJ@0 50X40320008
T+-OK 64ACAUKE*H	ACC@ACC@<+*HMA<KB	G /Q<HAA@*GS-<AJW	MG3@<AJ@*FRL /OH	E0VX~)4A+CEV~)1*	80H* 7YD40320009
T+-1(EZUC*0Q * H	/1LDV@G /OHSSD#	/OH00H*BFXHS/GS/	L@BGEZUEC ***	/1LDV@G /OHSSD#	/OH 9-640320010
T+-2HE-U.C.? /OH	EJJ4*04BZOH*MP<B	GEJGO C016JY4<MH	EMTEDFW01JJY0<MD	E@ (B  (DE (DECA	CCHN E9U40320011
T+-3C<D<<D@ACRU	<Z@BA /S /OH@0/B	:JUA@OH*OW@ *A	*@BGE+DN@B@G SI	*M<BG /OH **	8<OH* BFUM #--40320012
T+-3=FU1F@R. /1J	*OH*ND~ @ CEAFU	1JAZS<MM@<CEBFV@	16JZ @4D @4J/@4J	/OHM(/TABC@X@J 6	EC&D :1440320013
T+-49C@Q(/ HA*4	ACQX(S-HAR@4ACR	(T?HAP?(DQ?(DQTA	EC@H@G-67<D@(? 4	ACSH(Z H@S@4AC@*	(-H NH 40320014
T+-54 @Q( 66@CS.	2 N73JFT3JF-@J@7	:<OH(B3ADC:- ( &/	:C)32 @B( &7TC:G	2 OH( &7YC:82 N3	/OH R/X40320015
T+-67ET:JC~ /O7	:OH*OW@MTA@ YG	@ *** DFRU ***	/1L DVCG /OHS&EG /OH	O EH+A@BGC~. /1E	RAK< 51Y40320016
T+-7DB- *** YG ***	DFRY ***	/1LDV@G /OHS&E. /OH@ EK	+@BGC~. /1ERAK+	- *** B~8 ***	ER@D ** 12840320017
T+-8V/1LDV@G /OH	S&E  /OH@(-+B@B	G /S BEA@W@C /O	B@ +2<BG /ZE.17	X@H? /1J*0H*ND~	@ CD *3@40320018
T+-9-@JY4<M@EQTE	EFT 16/Z:<M@E@ (	A  (D) (D)CABCY4	( &:(CY?2 K@1JJY	O@/J/@4J/<DM+XLA	EC.D M3@40320019
T+-:8<DH+~4AC.D	+.*HAK@4AC.Q+ H	A@B@G /S /OH@0-0	:.MANOH*OW@HA*O	*@BGE+DN-XBG SI	N* ** QT 40320020

4032 3741 ATTACHMENT DATA TRANSFER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+-#D/0H00H*BFXH	HGW/NXBGEZUEB M	***.T***	*@BGE+D	N-@BG SI N*BG /O	< ** =LOH*BFUMOG R
T+-@J/1J*0H*ND~	@ CEAFU-1JJYD<MH	EMCEDFWH16JZ @4M	@4J @4J <DH NCA	EC4@(''+C432 KY	( &E =2@40320022
T+-Y:8CH C B-7	**4AE D BVG /OH	E6/8ETUC-0H*BF-Q	PFDM&EA*8CEV~)1*	80-DHML&AB-#*8 Z	<@YD PA*40320001
T+-Z5A33-BU32/06	286Z<0H*BHUC/OH*	HD&D BW. /1-.1 -	EO-FL*MAA - H*@B	GF 76BDCA@RJA@U<	C Y NIH40320002
T+-D0/<6GF ?Y@RC	A@RJ/JDMD DNOM*	QB=DHA*G1VHEFJOM	BES /1-.8--H0-F	N M/IA- H@XBG /Z	EEJO R1*40320003
T+-..1UBW0H*MP<B	GEJGO C016JY0<MH	E<CEDFWH1JJY0@4<	0MH@5XBGEM?A@/K	JOH*BE-# B~ /OH	EJKN 9YU40320004
T+-Y@C.F Z@BGEES	/1MJ@C0@<MDE(CE	BFV 1JAZS HYRWCE	AFVY?~C JDC3JD	OJE_*  .P 4AE50	.07H *. 40320005
T+-/_KG3JH 06->	<DM./64AB@M.-MH	AKEA@D-?7HAKCB	G /S /OH@0/*:4A4	H@H*DM@MV ***	@B GE+Y 7HU40320006
T+->VMG /OHS&D-	/OH00H*BFXHS@G)	LKBGEZUB80 ***	H D- **@BGE+DN&E	G SI L<BG /OH **	1  OH* QH@40320007
T+-?P /ZE@J2<@RX	/1J*0H*ND~ @ CE	AFU-16/Y0<M@ERTE	EFT 16JZD@4H @4J	@4J <D<<FLACCAU	OJ@0 50X40320008
T+-OK 64ACAUKE*H	ACC@ACC@<+*HMA<KB	G /Q<HAA@*GS-<AJW	MG3@<AJ@*FRL /OH	E0VX~)4A+CEV~)1*	80H* 7YD40320009
T+-1(EZUC*0Q * H	/1LDV@G /OHSSD#	/OH00H*BFXHS/GS/	L@BGEZUEC ***	/1LDV@G /OHSSD#	/OH 9-640320010
T+-2HE-U.C.? /OH	EJJ4*04BZOH*MP<B	GEJGO C016JY4<MH	EMTEDFW01JJY0<MD	E@ (B  (DE (DECA	CCHN E9U40320011
T+-3C<D<<D@ACRU	<Z@BA /S /OH@0/B	:JUA@OH*OW@ *A	*@BGE+DN@B@G SI	*M<BG /OH **	8<OH* BFUM #--40320012
T+-3=FU1F@R. /1J	*OH*ND~ @ CEAFU	1JAZS<MM@<CEBFV@	16JZ @4D @4J/@4J	/OHM(/TABC@X@J 6	EC&D :1440320013
T+-49C@Q(/ HA*4	ACQX(S-HAR@4ACR	(T?HAP?(DQ?(DQTA	EC@H@G-67<D@(? 4	ACSH(Z H@S@4AC@*	(-H NH 40320014
T+-54 @Q( 66@CS.	2 N73JFT3JF-@J@7	:<OH(B3ADC:- ( &/	:C)32 @B( &7TC:G	2 OH( &7YC:82 N3	/OH R/X40320015
T+-67ET:JC~ /O7	:OH*OW@MTA@ YG	@ *** DFRU ***	/1L DVCG /OHS&EG /OH	O EH+A@BGC~. /1E	RAK< 51Y40320016
T+-7DB- *** YG ***	DFRY ***	/1LDV@G /OHS&E. /OH@ EK	+@BGC~. /1ERAK+	- *** B~8 ***	ER@D ** 12840320017
T+-8V/1LDV@G /OH	S&E  /OH@(-+B@B	G /S BEA@W@C /O	B@ +2<BG /ZE.17	X@H? /1J*0H*ND~	@ CD *3@40320018
T+-9-@JY4<M@EQTE	EFT 16/Z:<M@E@ (	A  (D) (D)CABCY4	( &:(CY?2 K@1JJY	O@/J/@4J/<DM+XLA	EC.D M3@40320019
T+-:8<DH+~4AC.D	+.*HAK@4AC.Q+ H	A@B@G /S /OH@0-0	:.MANOH*OW@HA*O	*@BGE+DN-XBG SI	N* ** QT 40320020

4032 3741 ATTACHMENT DATA TRANSFER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96  
T+/OT JNCC D;2JZ >OH\*NN6 \*\*\*\*\* 48AP N( MOCL&AE/M9 JO -| DNZTCAES 8 JO 7| DN7TOAE\*-8 JN 60/ 2C640320043  
T+/P;BT-AEPT2DE# 2/0\*8 JNB8ZAM+ D N)\*M6BT-AEPX2DD# 2/0\*8 JN98ZAD+H N2< 6 \* + A00ES + AM 7#840320044  
T+/ORZ/OWC- NX10 -C- NZAPHC- N7/D =C- N\_1D7C0DOCJY 4C0D0EJY40H\*NX1T \* C /106|E0 <B GE\*8 5T 40320045  
T+/RM \*\*\* 6BAY2( - DR00AESB \*\*\* OAE/X \*\* CQHFT4BAR#| D CKLOAEV94 /R| ( D 0\*3- E/2D \*88AR 8BY\* QY040320046  
Y+/E|AC3;EVX0 \*\*\* + \*\* OF\*HG6330EXG 2/0688JR|| \*\*\*\* CS \*EUX D \*\*\* C- DKJR 1C- DP1R-C0DOPJY 4C0D JAB40320047  
T+/SHEX<E(CBGEU- (' -OY<HA \*\*\* 4 J E DC \*\* OM \*\*\* | -80W|H AB-1EG7+\*4CAEZT 2 6Q<DA\*KFxD\* /E Q8-D EY840320048  
T+/\*EC DRG6E3 0 |G5&E7CACEZT2 60 <DJ\*LF>8\*AAEQ8-D FCA6-NAXC|6MOW|H AC 0\*G408F606G5% 8HT4 4R040320049  
T+/) BAEG8-DFC X WA#\*|0-CW|HAA-0 (G5D;#CBGE( <BJ\* CF76<BJ\*PF7# /1L EC 8\*J/\_DC 8-Q/\_ DDH\* \*-040320050  
T+/)FE( 6 JY4( D PH 0AEP\* CQAFTS 4 J);C DN;6 0-H -JXHAG5\* /1Q\*EPX \* /1LEC6DN)1N98YD HC Y \*8X40320051  
T+/;6G3<EKCBGEP. /1L6(6DPPTQAFT. /1E(-DE<T6AE9# /0 ( -P\_LODEBY 4/A<CC&DP3A~HCHD \*\* C6 R1440320052  
T+/1 J-AOH\*BFH N \*\* A E<BGEZU \*\*\* \*\* |< D<RV<BGE+D OH\*8G SI E<BGD5# /OHED/6-GDAZL < CFR6 SL 40320053  
T+/ -XOH\*N:T-AOH# BHUAZDH\*LP0 \*\*\*\*\* CQHFT048A- OC -QB- \*\* C DR/A- HB <Q(OYCOH\*BG-D QAAX 20H40320054  
T+/XO8BG /ZA1A\_ +6HC /OH&A&808B GEE0< A/XF HC A/ 7F . /1MJ8C08KMD E(CBFFVH1JAZS<MD E6|< 40\*40320055  
T+/SS&E&C3J C3J \*\* 0JJVX<DMR#|CACA EFO\*0JJVX<D&R~64 AFC0QA7HAU 4AFD\* QA|HA/04 F 6RW|H AD34 K0Q40320056  
T+/T) 6YC8-GSC6D R-JV#8-EG8Y-OC \*\* Q1A-HOH\*BFXHF:R \*\* <BG /DBEA>KOH\* 8G-DQAA>1OH\*BG-D RWAX RD840320057  
T+/U07<BG /DBE1> \*C \*\* RS/TD|1CR-30 TFQL /1VLC \*\* RS/- 1C \*\* REA-1C D;2JZ 0OH\*BFXHF:R \*\* <B G /Y 10Q40320058  
T+/VL--8:27HG<00 \*FLNQB&0 FOYR(=B G / .BEA>W6 \*\* 6Y C8-DDC DRUAVXC D RU/VXC DRVAV\*OH\* N+00 22-40320059  
T+/V+ JVV6 <K JV DF s /1ERAC \*\*\*\*\* B \*\*\*\*\* |8\* CYC8-D HOH\*OB6&RW6 \*\* 8B GE+Y \*\* <BG SI \*\* <B G /0 ) Y40320060  
T+/XI \*\*\*\*\* B BABA8Q 6- 6-DRW&HMD\*X1FRU LBA.I8JMRE -M2-D RMJMHF<X1FRU8 C I8JU 2,<40320061  
T+/YD\*H<CX1FRU QBEC18JURF&S62-D RWK ME\*G1FRU1BA. A8JMRO 500-DRWJD HD<GOFRUGBAC88JW QAG- 08H40320062  
T+/Y\*D<X1FRUK8AB A8AWQ 0-60-DRVOM TD<G1FRU8 C/8AN QA-< 8\* RW T\* \*\* 6 B < A- G T \*\* 8Q<40320063  
T+/Z:-B(N&RB8N6B B RZND-DG |8 8 K 86HB --H \*\* |X \*U\_ FR-E6/Y0D8| /1- T87G0\*)|E0;PE&L 10\*\* -YY40320064

4032 3741 ATTACHMENT DATA TRANSFER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96  
T+/D55)S88XC6<| 05)PE0=|06MC05M? DSUCS;+.T1)J 6\*P S1;(.6+.T0)XTK51 \*P<PR6)SRPE1\*1>L N0=< JHM40320065  
T+/02)SNE(XE18X S88PR8>|A8=LS6<. Y88PL1)PG88/ 0\*s U5;(.6\*PG20G06+| R0)PS1XP8(|15\*P S1<D Q6 40320066  
T+/X.88E 0\*LD6\*P S8UCR1\*+I8>|E6MC C2<PC4U?D2\*GG5)S S88XC6<.Y88PD0;| A6+|R0)PS1XP8(|X E1=H ;S840320067  
T+/\_W2)PG48N 08T A6+GC88PR6(XE0\*J 8\*XAS;.F1)V 88P S847D0;|A6<.Y88N 9=).2DC16|I 24C 46|N 6HX40320068  
T+/>/6|R \*6CE0?I 0>TT10A-1\*.16<. Y88N-0>TT1MCT6+G N8X8E&NCC2<PC4U? D0;|A6+|R0)PS1XP R6<< 80840320069  
T+/?>2<PC4U?E9\* E0=|E1DCX94\* 0\*| T9<GL6+~XK8L06<P N1CC01UCT6\*GN8X8 E6MA-1)STODCB:DC R1\*0 R/840320070  
T+/0P1DCC0)|L6(8 V1)XF4\*8WK\*|7\*|E 2;I 5)8T6(XE0+L YK\*|7\*|E 2;I 0>L S:D7G5UCT5UC3\*ML 16(8 :S 40320071  
T+/1K0)~SE4CP0\* E6|C08DCE5;|R:DC 0K&L06(| 1<GTOMC R1\*GDE+|R0)PS1XP R8U7T1;.T6+.E6;P 102M 0 \*X40320072  
T+/2(6(XE8-05;. E6<LR2;PE6M7T1;. T6+.E86GR1;.E84C 01LC51)XV2\*|E6(X E8-05;.E6(|A88| HK=H)#040320073  
T+/3H2)PG48N 08T A6+GC88PR6+8R2;| E6+|R0)PS1XP8+| E8>(.88P584CFS\_V 0>LS:DC050G01XR .1(0 0J440320074  
T+/4C6<PN1DC01UC T6\*GN8X8E6MA-1)S TQDCB:DCN6\*XT1MC C0)|L6(|SV1)XF4\*S WK&LE0\*XE5<PN84C D0;|< 0Y40320075  
T+/4=0MCA1QLR1;. S6(XE18XS88PRK=| E8>| 8\*~48MC15;| E6)XU5=( 0\*.148X T:D7T1;.16<.A1DC P01U ~0Q40320076  
T+/592;|Y6<XN6<L A88E 8\*XAS;.F1)V .E8P584C3\*ML16<G N1DC1Q)R 0;|T1)P T2)8N6(|118TT8U? R1;H =TH40320077  
T+/641;| 2<GL86\_ 1;~P1\*|T6||7\*|E 0)PD6<V/SUC88=| E5;|I5\_N 48XG2+| S6(|8NK8XF6<.088/ 48U \*SH40320078  
T+/7718TT8UCN5>| 5\_N\*|C08;8R2;| E6<|A4\*| 88PR5<X N0;|E6<|H1\*|KK\*| 7\*|E 2;I 5)8T6<. U8>~)1D40320079  
T+/8DK=.E6;P108N 6\*P55\*8N8XN 08T EC\*1.8XPR9\*XC1MC R1;.PS\_PS1MCL0;| C2DCN5>| 6\*PS1;| .8XN =8840320080  
T+/9V6;P108N 6\*P S5\*8N8XN 1(XI9\*P R6<|H1\*|KK8V/SUC T6\*GN8X8E6NCL2)P E6<|H1\*|KK8P84C C2CM 3.040320081  
T+/:-0\*1.2)PT1)X U5=( 1<XD6(P084C 008|U6M73\*ML16<X S6(XE0\*LYK8V/SUC AB=|E5;|I5\_N 08T E0\*M 3C 40320082  
T+/8\*8=.E5;.E6<| H1\*|KK\*8V1)XF4\*S W6<|H1\*|KK&L88E 08TEC\*| 2|A.5)8 N6+.15+LL0;|E1DC C2CM \*88 40320083  
T+/900\*1.2\*GR6|N 6\*PG2;.T1)V 08T EC\*1.0)XR6|N 6\*P G2;.T1)V 08TE0\*1 .2\*GR\*OGA6)V C(8 RQD 2;-40320084  
TAJ8\*08TE0\*1. ....  
T A\*8E .....

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OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

EB/E\*E7\*=-DC\*PH\$ =\*7M&F|\*\*\*|\*\*C\*\*FX\*\*ASC\*\*R A SO\*\*Q\*\*\*\*\*07090520750 613757#X40320087

----- LAST PAGE -----

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

2 *
3 DECK 4
4 SEQ 0
0000 5 X404 START 0
6 TREP
0A00 7 ORG X*0A00*
8 *****
9 *
10 *
11 *
12 *****
0A00 4042 0A01 13 DC XL2*4042* PROGRAM ID AND REVISION LEVEL
0A02 00 0A02 14 DC XL1*00* SECTION FLAGS
0A03 01 0A03 15 DC XL1*01* CURRENT ROUTINE NUMBER
0A04 0000 0A05 16 DC XL2*0000* RESERVED
0A06 0A0D 0A07 17 DC AL2(RTN01) ADDRESS OF FIRST ROUTINE
0A08 FFFF 0A09 18 DC XL2*FFFF* ERROR RECORDING TABLE
0A0A 405000 0A0C 19 UDT1 DC XL3*405000* 3741

```

LAST CHG :08 01 74

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

21 *****
22 * ROUTINE 1 *
23 *****
24 *
25 * THIS ROUTINE WRITES A PATTERN FOR SEVERAL RECORDS.
26 * IT THEN READS THEM BACK AND COMPARES FOR PROPER DATA.
27 * IT ASSUMES THAT 401, 402, AND 403 RAN WITHOUT ERROR.
28 *
29 *****
30
0A0D 01 0A0D 31 RTN01 DC XL1*01* ROUTINE 1
0A0E 80 0A0E 32 DC XL1*80* MANUAL INTERVENTION REQUIRED
0A0F 0C4A 0A10 33 DC AL2(RTN02) NEXT ROUTINE
34
35 * INSTRUCT C.E. TO SET UP 3741.
36
37
38 LIO FUNBIT.LFUNC FUNCTION REG TO X*4000*
39
39
39
40 MVI JRM+1,X*87* SET UP FOR PGM TO SPECIFY READ OR WRT
41 MVI EXPFLG,X*FF* EXPECT AN INTERRUPT
42 MVI INTFLG,X*00* CLEAR INTERRUPT FLAG
43 BEG B PRINT
0A25 42 0A25 44 DC XL1*42*
0A26 27 0A26 45 DC AL1(ASTRK1-ASTRKS)
0A27 149D 0A28 46 DC AL2(ASTRK1)
0A29 40F1 0A2A 47 DC XL2*40F1*
0A2B C0 87 021A B PRINT
0A2F 02 0A2F 49 DC XL1*02*
0A30 27 0A30 50 DC AL1(HD1-HD1B)
0A31 15FC 0A32 51 DC AL2(HD1)
0A33 C0 87 021A B PRINT
0A37 02 0A37 53 DC XL1*02*
0A38 27 0A38 54 DC AL1(ASTRK1-ASTRKS)
0A39 149D 0A3A 55 DC AL2(ASTRK1)
0A3B C0 87 021A B PRINT
0A3F 01 0A3F 57 DC XL1*01*
0A40 27 0A40 58 DC AL1(IN1B-IN1A)
0A41 1317 0A42 59 DC AL2(IN1B)
0A43 C0 87 021A B PRINT
0A47 01 0A47 61 DC XL1*01*
0A48 27 0A48 62 DC AL1(IN1C-IN1B)
0A49 133E 0A4A 63 DC AL2(IN1C)
0A4B C0 87 021A B PRINT
0A4F 01 0A4F 65 DC XL1*01*
0A50 27 0A50 66 DC AL1(IN1D-IN1C)
0A51 1365 0A52 67 DC AL2(IN1D)
0A53 C0 87 021A B PRINT
0A57 01 0A57 69 DC XL1*01*
0A58 27 0A58 70 DC AL1(IN1E-IN1D)
0A59 138C 0A5A 71 DC AL2(IN1E)
0A5B C0 87 021A B PRINT
0A5F 01 0A5F 73 DC XL1*01*
0A60 27 0A60 74 DC AL1(IN1-IN1E)
0A61 13B3 0A62 75 DC AL2(IN1)
0A63 C0 87 021A B PRINT
0A67 12 0A67 77 DC XL1*12*
0A68 C0 87 021A B PRINT
0A6C 01 0A6C 79 DC XL1*01*
0A6D 27 0A6D 80 DC AL1(ASTRK1-ASTRKS)
0A6E 149D 0A6F 81 DC AL2(ASTRK1)
0A70 C0 87 021A B PRINT
0A74 02 0A74 83 DC XL1*02*
0A75 27 0A75 84 DC AL1(ASTRK1-ASTRKS)
0A76 149D 0A77 85 DC AL2(ASTRK1)

```

4042 3741 DIAGNOSTIC FUNCTION TEST

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0A78 C0 87 021A	86	B	PRINT
0A7C 01	0A7C 87	DC	XL1*01*
0A7D 27	0A7D 88	DC	AL1(IN2B-IN2A)
0A7E 1401	0A7F 89	DC	AL2(IN2B)
0A80 C0 87 021A	90	B	PRINT
0A84 01	0A84 91	DC	XL1*01*
0A85 27	0A85 92	DC	AL1(IN2C-IN2B)
0A86 1428	0A87 93	DC	AL2(IN2C)
0A88 C0 87 021A	94	B	PRINT
0A8C 01	0A8C 95	DC	XL1*01*
0A8D 27	0A8D 96	DC	AL1(IN2D-IN2C)
0A8E 144F	0A8F 97	DC	AL2(IN2D)
0A90 C0 87 021A	98	B	PRINT
0A94 02	0A94 99	DC	XL1*02*
0A95 27	0A95 100	DC	AL1(IN2-IN2D)
0A96 1476	0A97 101	DC	AL2(IN2)
0A98 C0 87 021A	102	B	PRINT
0A9C 01	0A9C 103	DC	XL1*01*
0A9D 27	0A9D 104	DC	AL1(ASTRK1-ASTRKS)
0A9E 149D	0A9F 105	DC	AL2(ASTRK1)
0AA0 C0 87 021A	106	B	PRINT
0AA4 01	0AA4 107	DC	XL1*01*
0AA5 27	0AA5 108	DC	AL1(ASTRK1-ASTRKS)
0AA6 149D	0AA7 109	DC	AL2(ASTRK1)
0AA8 C0 87 021A	110	B	PRINT
0AAC 02	0AAC 111	DC	XL1*02*
0AAD 27	0AAD 112	DC	AL1(ASTRK1-ASTRKS)
0AAE 149D	0AAF 113	DC	AL2(ASTRK1)
0AB0 C0 87 021A	114	B	PRINT
0AB4 12	0AB4 115	DC	XL1*12*
0AB5 C0 87 021A	116	B	PRINT
0AB9 02	0AB9 117	DC	XL1*02*
0ABA 27	0ABA 118	DC	AL1(ASTRK1-ASTRKS)
0ABB 149D	0ABC 119	DC	AL2(ASTRK1)
0ABD C0 87 021A	120	B	PRINT
0AC1 01	0AC1 121	DC	XL1*01*
0AC2 27	0AC2 122	DC	AL1(IN3B-IN2XC)
0AC3 1539	0AC4 123	DC	AL2(IN3B)
0AC5 C0 87 021A	124	B	PRINT
0AC9 02	0AC9 125	DC	XL1*02*
0ACA 27	0ACA 126	DC	AL1(IN3-IN3B)
0ACB 1560	0ACC 127	DC	AL2(IN3)
0ACD C0 87 021A	128	B	PRINT
0AD1 01	0AD1 129	DC	XL1*01*
0AD2 27	0AD2 130	DC	AL1(IN4A-IN4B)
0AD3 15AE	0AD4 131	DC	AL2(IN4A)
0AD5 C0 87 021A	132	B	PRINT
0AD9 06	0AD9 133	DC	XL1*06*
0ADA 27	0ADA 134	DC	AL1(IN4-IN4A)
0ADB 15D5	0ADC 135	DC	AL2(IN4)
0ADD C0 87 0222	136	B	HALT
0AE1 40F1	0AE2 137 HTF1	DC	XL2*40F1*
0AE3 31 45 1C4C	138	LIO	ZERO.LDTR
0AE7 30 43 1C7C	139	SNS	SNS3.SLINES
0AEB 0D 01 1C7C 1C4E	141	CLC	SNS3(2).XF900
0AF1 F2 01 11	142	JNE	WRPOFF
0AF4 C0 87 021A	143	B	PRINT
0AF8 16	0AF8 144	DC	XL1*16*
0AF9 C0 87 021A	145	B	PRINT
0AFD 02	0AFD 146	DC	XL1*02*
0AFE 4F	0AFE 147	DC	AL1(MSG22-MSG22B)
0AFF 1ACE	0B00 148	DC	AL2(MSG22)
0B01 C0 87 0A21	149	B	BEG
	0B05 150 WRPOFF EQU	*	*
	151		
	152 *	-----	
	153 *	SET UP FOR WRITE LOOP	

WAIT FOR CE TO PREPARE 3741  
LOAD DATA TRANSFER REG WITH 0000  
SNS IO TRANSFER LINES  
IF F900, WRAP CONNECTOR STILL ON.  
IF WRAP CONN IS OFF, JUMP (CONTINUE)  
SPACE 6  
TELL HIM WRAP IS STILL ATTACHED.

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		154 *	
		155 *	
0B05 3C 55 1C57	156	MVI	CHAR.X*55*
0B09 3C 34 1C5B	157	MVI	RECCTR,NUMREC
0B0D 3C 42 0D16	158	MVI	DOSIO+1.SWRITE
	159		
0B11 0C 00 1275 1C57	160	MVC	BUFF2+127(1),CHAR
0B17 0C 7E 1274 1275	161	MVC	BUFF2+126(127),BUFF2+127
0B1D 0C 02 1C6B 1C6B	162	MVC	SEQ(3),NUMONE
0B23 0C 02 11FB 1C6B	163	MVC	BUFF2+5(3),SEQ
	164		
	165 *	WRITE LOOP	
	166		
0B29 0C 7F 11F5 1275	0B29 167 WLOOP	EQU *	MOVE PATTERN BUFFER TO I/O BUFF
0B2F C0 87 0CA3	168	MVC	BUFF1+127(128),BUFF2+127
0B33 0F 00 1C5B 1C48	169	B	RW
0B39 F2 81 0C	170	SLC	RECCTR(1),ONE
0B3C C0 87 0EB2	171	JZ	ENDW
0B40 C0 87 0B29	172	B	CHGBUF
0B44 C0 87 0B48	173	B	WLOOP
	174	B	***
	0B48 175 ENDW	EQU *	
0B48 C0 87 0F8C	176	B	GETINT
0B4C F3 43 50	177	SIO	REQJ+RSR.SCTL1
0B4F F3 40 04	178	SIO	SDISAB.SCNTRL
0B52 C0 87 0B56	179	B	***

START WITH 55 FIELD  
NUMBER OF RECORDS TO WRITE  
PREPARE TO WRITE  
PROPOGATE \*CHAR\* THROUGH BUFFER  
INITIALIZE COUNTER (FOFOF1)  
PUT COUNT INTO BUFFER

DECREMENT RECORD COUNTER  
EXIT LOOP WHEN ALL RECORDS WRITTEN  
CHANGE PATTERN IN BUFFER  
BRANCH BACK FOR NEXT WRITE  
FILLER  
WAIT FOR INTERRUPT (READ MODE)  
RESPOND EOJ AND SENSE RESPONSE  
DISABLE INTERRUPTS

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		181 *		READ 52 RECORDS AND COMPARE VALUES AS WRITTEN
		182 *		
0B56 3C FF 1C50		183	MVI	EXPFLG,X'FF' EXPECT AND INT
0B5A C0 87 021A		184	B	PRINT
0B5E 42	0B5E	185	DC	XL1'42'
0B5F 27	0B5F	186	DC	AL1(ASTRK1-ASTRKS)
0B60 149D	0B61	187	DC	AL2(ASTRK1)
0B62 40F2	0B63	188	DC	XL2'40F2'
0B64 C0 87 021A		189	B	PRINT
0B68 02	0B68	190	DC	XL1'02'
0B69 28	0B69	191	DC	AL1(HD2-HD2B)
0B6A 1624	0B6B	192	DC	AL2(HD2)
0B6C C0 87 021A		193	B	PRINT
0B70 02	0B70	194	DC	XL1'02'
0B71 27	0B71	195	DC	AL1(IN1X-IN1XB)
0B72 13DA	0B73	196	DC	AL2(IN1X)
0E74 C0 87 021A		197	B	PRINT
0B78 01	0B78	198	DC	XL1'01'
0B79 27	0B79	199	DC	AL1(ASTRK1-ASTRKS)
0B7A 149D	0B7B	200	DC	AL2(ASTRK1)
0B7C C0 87 021A		201	B	PRINT
0B80 12	0B80	202	DC	XL1'12'
0B81 C0 87 021A		203	B	PRINT
0B85 01	0B85	204	DC	XL1'01'
0B86 27	0B86	205	DC	AL1(IN2XA-IN2XB)
0B87 14C4	0B88	206	DC	AL2(IN2XA)
0B89 C0 87 021A		207	B	PRINT
0B8D 01	0B8D	208	DC	XL1'01'
0B8E 27	0B8E	209	DC	AL1(IN2X-IN2XA)
0B8F 14EB	0B90	210	DC	AL2(IN2X)
0B91 C0 87 021A		211	B	PRINT
0B95 02	0B95	212	DC	XL1'02'
0B96 27	0B96	213	DC	AL1(IN2XC-IN2X)
0B97 1512	0B98	214	DC	AL2(IN2XC)
0B99 C0 87 021A		215	B	PRINT
0B9D 01	0B9D	216	DC	XL1'01'
0B9E 27	0B9E	217	DC	AL1(ASTRK1-ASTRKS)
0B9F 149D	0BA0	218	DC	AL2(ASTRK1)
0BA1 C0 87 021A		219	B	PRINT
0BA5 12	0BA5	220	DC	XL1'12'
0BA6 C0 87 021A		221	B	PRINT
0BAA 02	0BAA	222	DC	XL1'02'
0BAB 27	0BAB	223	DC	AL1(ASTRK1-ASTRKS)
0BAC 149D	0BAD	224	DC	AL2(ASTRK1)
0BAE C0 87 021A		225	B	PRINT
0BB2 01	0BB2	226	DC	XL1'01'
0BB3 27	0BB3	227	DC	AL1(IN3B-IN2XC)
0BB4 1539	0BB5	228	DC	AL2(IN3B)
0BB6 C0 87 021A		229	B	PRINT
0BBA 02	0BBA	230	DC	XL1'02'
0BBB 27	0BBB	231	DC	AL1(IN3X-IN3)
0BBC 1587	0BBD	232	DC	AL2(IN3X)
0BBE C0 87 021A		233	B	PRINT
0BC2 01	0BC2	234	DC	XL1'01'
0BC3 27	0BC3	235	DC	AL1(IN4A-IN4B)
0BC4 15AE	0BC5	236	DC	AL2(IN4A)
0BC6 C0 87 021A		237	B	PRINT
0BCA 06	0BCA	238	DC	XL1'06'
0BCB 27	0BCB	239	DC	AL1(IN4-IN4A)
0BCC 15D5	0BCD	240	DC	AL2(IN4)
0BCE C0 87 0222		241	B	HALT
0BD2 40F2	0BD3	242	HTF2 DC	XL2'40F2'
		243		
		244 *		-----
		245 *		SET UP FOR READ LOOP
		246 *		
		247 *		-----
0BD4 3C 34 1C5B		248	MVI	RECCTR,NUMREC NUMBER OF RECORDS TO BE READ

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0BD8 3C 41 0D16		249	MVI	DOSIO+1,SREAD READ
0BDC 3C 55 1C57		250	MVI	CHAR,X'55' START EXPECTING 55'S
0BE0 0C 00 1275 1C57		251	MVC	BUFF2+127(1),CHAR
0BE6 0C 7E 1274 1275		252	MVC	BUFF2+126(127),BUFF2+127 PROPAGATE CHAR
0BEC 0C 02 1C6B 1C6B		253	MVC	SEQ(3),NUMONE INITIALIZE COUNTER (FOFOF1)
0BF2 0C 02 11FB 1C6B		254	MVC	BUFF2+5(3),SEQ PUT COUNTER INTO BUFFER
		255		
		256 *		READ LOOP
		257		
0BF8 C0 87 0CA3		258	RLOOP B RW	READ RECORD
0BFC 0D 7F 11F5 1275		259	CLC	BUFF1+127(128),BUFF2+127 COMPARE READ AND EXPECTED DATA
0C02 C0 01 0F01		260	BNE	CMPER
0C06 0F 00 1C5B 1C48		261	SLC	RECCTR,ONE
0C0C C0 81 0C1C		262	BZ	ENDR
0C10 C0 87 0EB2		263	B	CHGBUF
0C14 C0 87 0BF8		264	B	RLOOP
0C18 C0 87 0C1C		265	B	**4
	0C1C	266	ENDR EQU	*
0C1C C0 87 0F8C		267	B	GETINT
0C20 30 43 1C7C		268	SNS	SNS3,SLINES
0C24 38 08 1C7C		269	TBN	SNS3,EOJ
0C28 F2 10 10		270	JT	EOJISU
0C2B C0 87 021A		271	B	PRINT
0C2F C6	0C2F	272	DC	XL1'C6'
0C30 4F	0C30	273	DC	AL1(MSG12-MSG12B)
0C31 19BA	0C32	274	DC	AL2(MSG12)
0C33 408A	0C34	275	DC	XL2'408A'
		276		
0C35 C0 87 0222		277	B	HALT
0C39 408A	0C3A	278	HT6A DC	XL2'408A'
	0C3B	279	EOJISU EQU	*
0C3B F3 40 04		280	SIO	SDISAB,SCNTRL
0C3E F3 43 08		281	SIO	RE,SCTL1
0C41 C0 87 0C45		282	B	**4
0C45 C0 87 022A		283	B	LOAD
0C49 00	0C49	284	CC	XL1'00'
				TERMINATE
				NORMAL

4042 3741 DIAGNOSTIC FUNCTION TEST

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE	ADDR STMT SOURCE STATEMENT
	286 *****
	287 * RTN 02 *
	288 *****
	289
OC4A 02	OC4A 290 RTN02 DC XL1*02* ROUTINE NO.
OC4B 80	OC4B 291 DC XL1*80* MANUAL INTERVENTION
OC4C FFFF	OC4C 292 DC XL2*FFFF* THIS IS LAST
	293
OC4E 3C 07 0CD0	294 MVI JRW+1,X*07* SET UP SO PROGRAM SELECTS READ OR WRT
OC52 C0 87 021A	295 B PRINT ROUTINE 2 HEADING
OC56 46	OC56 296 DC XL1*46*
OC57 77	OC57 297 DC AL1(HD3-HD3B)
OC58 169B	OC59 298 DC AL2(HD3)
OC5A 40F6	OC5B 299 DC XL2*40F6*
OC5C 38 04 020A	300 LOOP2 TBN SBYTE2,SSW15 IF SSW 15 IS ON, DON'T HALT.
OC60 F2 10 06	301 JT KEEPON
OC63 C0 87 0222	302 B HALT HALT BEFORE EXECUTION OF RYN
OC67 40F6	OC68 303 HTF6 DC XL2*40F6*
	304
OC69 3C FF 1C50	305 KEEPON MVI EXPFLG,X*FF* EXPECT INTERRUPT
OC6D C0 87 0CA3	306 B RW DO READ OR WRITE
OC71 F3 40 04	307 SIO SDISAB,SCNTRL DISABLE INTERRUPTS
OC74 3D 41 0D16	308 CLI DOSIO+1,SREAD IF WE READ, PRINT RESULTS
OC78 C0 81 0C88	309 BE RDDONE
OC7C C0 87 021A	310 B PRINT WRITE WAS DONE.
OC80 06	OC80 311 DC XL1*06*
OC81 4F	OC81 312 DC AL1(HD5-HD5B)
OC82 1761	OC83 313 DC AL2(HD5)
OC84 C0 87 0C5C	314 B LOOP2
	315
	316 RDDONE B PRINT
OC88 C0 87 021A	OC8C 317 DC XL1*02*
OC8C 02	OC8D 318 DC AL1(HD4-HD4B)
OC8D 77	OC8E 319 DC AL2(HD4)
OC8E 1712	OC8F 320
	321 MVC X*8FF*(128),BUFF1+127 PUT BUFF IN DCP PRINT BUFFER
OC90 0C 7F 08FF 11F5	322 B PRINT
OC96 C0 87 021A	OC9A 323 DC XL1*22* PRINT BUFFER IN HEX
OC9A 22	324 B DUMP1
OC9B C0 87 10DF	325 B LOOP2 GO BACK
OC9F C0 87 0C5C	326 * 1. OPEN/CLOSE DISK 2. F.S.LOWER CHAR ADV 3. 43---128
	327 * 4. F.S.LOWER X 5. TYPE MESSAGE 6. F.S.LOWER N
	328 * 8. FIELD CDR ---->
	329 *
	330 * 1. F.S.LOWER CHAR ADV 2. F.S.LOWER V 3. FIELD CDR <----
	331 *
	332 *

ERR LOC OBJECT CODE	ADDR STMT SOURCE STATEMENT
	334 *****
	335 * RW *
	336 *****
	337 * READ OR WRITE ROUTINE.
	338 * READS OR WRITES DUE TO PREV (CUS SET UP OR *
	339 * AS SET UP AT 3741 (SEE JRW JUMP) *
	340 *****
	341
	342 RW ST RWR+3,ARR SET UP RETURN
	343 B GETINT WAIT FOR INTERRUPT
	344
	345 SNS SNS3,SLINES SNS IO TRANSFER LINES
	346 TBF SNS3,X*80*+EDS+BIPE+EDR+EOJ+AT INVALID REASON FOR INTR ?
	347 BF STATER IF NOT OFF, GO PRINT STATUS ERROR
	348
	349 TBN SNS3-1,X*04* IS THIS THING ON-LINE
	350 BF OFFLN
	351
	352 * MAKE SURE ONE AND ONLY ONE MODE IS ON.
	353 TBN SNS3-1,X*03* SEE IF BOTH READ AND WRITE MODE ON
	354 BT BADMOD STATUS ERROR IF BOTH ON
	355 TBF SNS3-1,X*03* SEE IF BOTH READ AND WRITE MODE OFF
	356 BT BADMOD STATUS ERROR IF BOTH OFF
	357
	357
	358 * SELECT SET UP AS PER PROGRAM OR AS PER 3741. JUMP IS ALTERED.
	359 JRW JC EXT,***
	360
	360
	361 * SET UP READ OR WRITE ACCORDING TO 3741 (READ OR WRITE IS ON)
	362 MVI DOSIO+1,SWRITE
	363 TBN SNS3-1,X*01* IF READ MODE ON (S/3 WRITE)
	364 JT MODEOK
	365
	366 MVI DOSIO+1,SREAD
	367 J MODEOK THEN CONTINUE READ
	368
	368
	369 * SET UP READ OR WRITE ACCORDING TO PROGRAM
	370 EXT CLI DOSIO+1,SREAD IS THIS A READ SIO
	371 JE ISREAD
	OC8B 372 ISWRIT EQU *
	373 TBN SNS3-1,X*01* MAKE SURE READ MODE ON
	374 TBF SNS3-1,X*02* AND WRITE MODE OFF
	375 BF SETER
	376 J MODEOK IF OK, GO ON
	377
	OCFA 378 ISREAD EQU *
	379 TBN SNS3-1,X*02* MAKE SURE 3741 WRITE MODE ON
	380 TBF SNS3-1,X*01* AND READ MODE OFF
	381 BF SETER
	382
	382
	382
	OD06 383 MODEOK EQU *
	384 SIO RE,SCTL1 RESPOND TO WRITE/READ MODE
	385 LIO LENGTH,LLCR LOAD LENGTH COUNT REGISTER (7F)
	386 LIO BUFF1@,LCAR LOAD DATA ADDRESS REGISTER
	387 MVI EXPFLG,X*FF* EXPECT AN INTERRUPT
	388
	389 *
	390 DOSIO SIO X*00*,*-* SIO TO READ OR WRITE
	391 *
	392 BLP MVI WSEC,2 WAIT 2 SEC FOR NOT BUSY (1 RECORD)
	393 WAITBY TIO ISSBY,TBSY BRANCH IF BUSY
	OCDD 3C 41 0D16
	OCDE 3C 01 1C7B
	OCDA F2 10 29
	OCDD 3C 41 0D16
	OCE1 F2 87 22
	OCE4 3D 41 0D16
	OCEB F2 81 0F
	OCEB 38 01 1C7B
	OCEF 39 02 1C7B
	OCF3 C0 90 0F43
	OCF7 F2 87 0C
	OCFA 38 02 1C7B
	OCFE 39 01 1C7B
	OD02 C0 90 0F43
	OD06 F3 43 08
	OD09 31 42 1C72
	OD0D 31 44 1278
	OD11 3C FF 1C50
	OD15 F3 00 00
	OD18 3C 02 0EA9
	OD1C C1 42 CD23

4042 3741 DIAGNOSTIC FUNCTION TEST

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
OD20	F2 87 0C	394	J	SNOTBY	
OD23	C0 87 CE5A	395	ISBSY	B	WAIT
OD27	C0 87 OEED	396	B	TOOBSY	'WAIT' COMES HERE IF TIMEOUT
OD28	C0 87 OD1C	397	B	WAITBY	'WAIT' COMES HERE NORMALLY
OD2F	C1 42 OD2F	398	SNOTBY	EQU	*
OD33	C0 87 OF8C	399	TIO	*,TBSY	
		400	B	GETINT	WAIT FOR INTERRUPT
		401			
		402			
OD37	30 43 1C7C	403	SNS	SNS3,SLINES	SNS I/O TRANSFER LINES
OD3B	0C 01 1C7A 1C82	404	MVC	SNS2(2),SNS2I	MOVE IN SNS AS PICKED UP IN INT RTN.
		405			
OD41	3C FF 1C50	406	MVI	EXPFLG,X'FF'	EXPECT NEXT INT
		407	*	CHECK FOR NO-OP	
		408			
OD45	38 04 1C79	409	TBN	SNS2-1,X'C4'	QUIT IF NO-OP BIT ON.
OD49	C0 90 OD60	410	BF	NOOPOK	
		411			
OD4D	F3 13 50	412	SIC	RSR+REOJ,SCTL1	SENSE RESPONSE/EQJ
OD50	C0 87 021A	413	B	PRINT	NO-OP'D SIO
OD54	C6	OD54	414	DC	XL1'C6'
OD55	28	OD55	415	DC	AL1(MSG6-MSG6B)
OD56	189A	OD57	416	DC	AL2(MSG6)
OD5E	4082	OD59	417	DC	XL2'4082'
		418			
OD5A	C0 87 0222	419	B	HALT	
OD5E	4082	OD5F	420	HT82 DC	XL2'4082'
		421			
		422	*	CHECK FOR DATA TRANSFER PARITY ERROR	
		423			
OD60	38 08 1C79	424	NOOPOK	TBN SNS2-1,X'08'	DATA XFER PARITY ERROR ?
OD64	F2 90 31	425	JF	NODTPE	
OD67	F3 43 90	426	SI	RSR+BOPE,SCTL1	SENSE RESPONSE / BUS OUT PARITY ERR
OD6A	C0 87 021A	427	B	PRINT	DATA TRANSFER REG. PARITY ERROR
OD6E	C1	OD6E	428	DC	XL1'C1'
OD6F	27	OD6F	429	DC	AL1(MSG7-MSG7B)
OD70	18C1	OD71	430	DC	AL2(MSG7)
OD72	4081	OD73	431	DC	XL2'4081'
OD74	3D 42 OD16	432	CLI	DOSIO+1,SWRITE	WAS THIS WRITE (TO 3741)
OD78	F2 81 0F	433	JE	PEWRIT	
		434	PEREAD	EQU *	PARITY ERROR WAS ON READ
OD7B	C0 87 021A	435	B	PRINT	'WHILE READING FROM 3741'
OD7F	81	OD7F	436	DC	XL1'81'
OD80	27	OD80	437	DC	AL1(MSG24-MSG24B)
OD81	181C	OD82	438	DC	AL2(MSG24)
OD83	C0 87 OF23	439	B	EXPEND	
OD87	F2 87 08	440	J	PEHALT	SO TELL HIM EXPECTED AND FOUND
OD8A	C0 87 021A	441	PEWRIT	B	PRINT
OD8E	86	OD8E	442	DC	XL1'86'
OD8F	27	OD8F	443	DC	AL1(MSG25-MSG25B)
OD90	1843	OD91	444	DC	AL2(MSG25)
		445			
OD92	C0 87 0222	446	PEHALT	B	HALT
OD96	4081	OD97	447	HT81 DC	XL2'4081'
		448			
		449	*	CHECK I/O TRANSFER LINES	
		450	NODTPE	EQU *	
		451			
OD98	39 EC 1C7C	452	TBF	SNS3,X'80'+EDS+BIPE+EQJ+AT	CHECK FOR STATUS ERRORS
OD9C	C0 90 ODFD	453	BF	STATER	IF NOT OFF, PRINT STATUS ERROR
		454			
		455	*	CHECK FOR LCR ERROR	
		456			
ODA0	3D FF 1C7A	457	CLI	SNS2,X'FF'	LCR = FF ?
ODA4	F2 81 38	458	JE	CKEOR	GO CHECK THAT EOR IS UP.
		459			
ODA7	3C 01 0EA9	460	MVI	WSEC.1	

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
CDAB	C0 87 0E5A	461	W1	B	WAIT
CDAF	C0 87 0DB7	462	S	**8	WAIT 1 SEC
ODB3	C0 87 ODAB	463	B	W1	
		464			
ODB7	F3 43 10	465	SIO	RSR,SCTL1	RESPONSE TO LCR ERROR
		466			
ODBA	C0 87 C21E	467	B	UNPACK	SET UP FOUND LCR VALUE
ODBE	01	ODBE	468	DC	XL1'1'
ODBF	1C7A	ODC0	469	DC	AL2(SNS2)
ODC1	191C	ODC2	470	DC	AL2(MSG9)
		471			
ODC3	C0 37 021A	472	B	PRINT	
ODC7	C1	ODC7	473	DC	XL1'C1'
ODC8	33	ODC8	474	DC	AL1(MSG9-MSG9B)
ODC9	191C	ODCA	475	DC	AL2(MSG9)
ODCB	4088	ODCC	476	DC	XL2'4088'
ODCD	C0 87 021A	477	B	PRINT	*NOTE- LENGTH MUST BE 128 ...*
ODD1	86	ODD1	478	DC	XL1'86'
ODD2	77	ODD2	479	DC	AL1(MSG27-MSG27B)
ODD3	1C09	ODD4	480	DC	AL2(MSG27)
ODD5	C0 87 0222	481	LCRHLT	B	HALT
ODD9	4088	ODDA	482	HT88 DC	XL2'4088'
ODDB	C0 87 0DD5	483	B	LCRHLT	LCR ERROR
		484			
		485	CKEOR	EQU *	
ODDF	38 10 1C7C	486	TBN	SNS3,EOR	MAKE EOR IS UP (CAUSING BUSY TO DROP)
ODE3	F2 10 10	487	JT	AOK	IF SO, GO ISSUE RESPONSE
		488			
ODE6	C0 87 021A	489	B	PRINT	*EOR NOT UP AFTER RECORD PROCESSED*
ODEA	C6	ODEA	490	DC	XL1'C6'
ODEB	4F	ODEB	491	DC	AL1(MSG26-MSG26B)
ODEC	1892	ODED	492	DC	AL2(MSG26)
ODEE	408F	ODEF	493	DC	XL2'408F'
ODF0	C0 87 0222	494	B	HALT	END OF RECORD (EOR) NOT UP AFTER
ODF4	408F	ODF5	495	HT8F DC	XL2'408F'
		496			RECORD HAS BEEN PROCESSED
		497	***		
		498	***		
		499	***		
		500			RESPOND TO SUCCESSFUL SIO
ODF6	F3 43 08	501	AOK	SIO	RE,SCTL1
ODF9	C0 87 0000	502	RWR	B	**
					RESPONSE (SIO SUCCESSFUL)
					RETURN TO CALLER

4042 3741 DIAGNOSTIC FUNCTION TEST

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
504 *****
505 *   SUBROUTINES   *
506 *   *
507 *****
508
509 *****
510 *   STATER
511 *****
ODFD 34 08 0E59      ODFD 512 STATER EQU *
513 ST   STATRR+3,ARR      SET UP RETURN
514 EOJFLG JC   STAT1,X*87*  CAN BE ALTERED TO IGNORE EOJ ERROR
515 TBN   SNS3,EOJ        IF ITS EOJ ONLY, IGNORE
516 TBF   SNS3,X'FF'-EOJ
517 JT   STATRR
518
OE0F 34 08 0E59      OE0F 519 STAT1 EQU *
520 SID   RE,SCTL1        RESPOND
521 B     ***
522 B     UNPACK
523 DC   IL1*2*
524 DC   AL2(SNS3)
525 DC   AL2(STATXX)
526 B     PRINT
527 DC   XL1*C2*
528 DC   AL1(STATMG-STATB)
529 DC   AL2(STATMG)
530 DC   XL2*4083*        STATUS ERROR
531
532 *
533 *   SHIFT OFF BITS AND PUT IN MESSAGE DESCRIBING THAT BIT AND PRINT
534 *
535 *
536 LA    STAB,XR1
537 MVC   WORK(2),SNS3    PUT SNS3 INTO WORK AREA
538 SPLDOP ALC  WORK(1),WORK
539 BDL   SETPT          IF THAT BIT IS ON, GO PRINT
540 LA    SLEN(,XR1),XR1
541 B     SPLDOP          CONTINUE UNTIL BIT FOUND
542 SETPT EQU *
543 ST    PD,XR1         POINT TO LINE WHICH DESCRIBES BIT
544
545 B     PRINT
546 DC   XL1*86*
547 DC   AL1(SLEN)
548 PD   DC   AL2(---)
549
550 B     HALT          ERROR DURING WAIT FOR R/W MODE
551 HTB3 DC   XL2*4083*
552
553 STATRR B   ***      RETURN
554
554
554
555 *****
556 *   WAIT   *
557 *****
558 *   SUBROUTINE WAITS 1 MILLI SEC PER CALL.  AFTER EACH SEC IT
559 *   DECREMENTS SECONDCOUNT.
560 *   SAMPLE LINKAGE ---
561 *
562 *           MVI WSEC,5    BEFORE LOOP, SET UP # OF SECONDS
563 *           LOOP B WAIT   <--- LINKAGE TO TIMEOUT ROUTINE
564 *           B TIMOUT     <--- WAIT RETURNS HERE FOR TIMEOUT
565 *           B LOOP       <--- WAIT RETURNS HERE NOMALLY
566 *
567 *****

```

4042 3741 DIAGNOSTIC FUNCTION TEST

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
568
569 WAIT EQU *
570 ST   WAITR+3,ARR      SET UP RETURN
571 CLI  WSEC,0          NEW COUNT VALUE ?
572 JE   OLDSEC
573 MVC  WSECA(2),WSEC    PUT NEW SEC COUNT INTO WORK
574 SLC  WSEC(2),WSEC    ZERO THE MAIN SEC COUNT.
575 MVC  WCNTR(2),W1000  SET UP TO DO 1000 TIMES
576 OLDSEC CLC *(256),*  WAIT 1 MILLI
577 CLC  *(60),*
578 SLC  WCNTR(2),W0001  DO 1000 TIMES
579 JNZ  WAITR          THROUGH LOOP
580 MVC  WCNTR(2),W1000  SET UP TO DO ANOTHER 1000 MILLI SEC
581 SLC  WSECA(2),W0001  DECREMENT NUMBER OF SEC TO WAIT
582 BZ   WAITR          IF IT TIMED OUT, RETURN DIRECTLY
583 WAITR ALC WAITR+3(2),W0004  RETURN TO CALLER +4
584 WAITR B   ***
585
586 WCNTR DC XL2*0000*
587 WSEC  DC XL2*0000*
588 WSECA DC XL2*0000*
589 W1000 DC JL2*1000*
590 W0001 DC IL2*1*
591 W0004 DC IL2*4*
592
592
592
593 *****
594 *   CHGBUF *
595 *   *
596 *****
597 *   CHANGE BUFFER FOR WRITE OR READ.
598 *   PATTERN - 55 AA FF 01 00 55 AA FF 01 00 ...
599 *****
600
601 CHGBUF ST   CHGBUR+3,ARR      FOR RETURN
602 CLI  CHAR,X*01*          IF CHAR IS 01, FORCE TO 00
603 JNE  CHG1
604 MVI  CHAR,X*00*
605 J    NDRAP
606 CHG1 EQU *
607
608 ALC  CHAR(1),INCVAL
609 JNOL NDRAP
610 MVI  CHAR,X*01*
611 NORAP EQU *
612 MVC  BUFF2+127(1),CHAR
613 MVC  BUFF2+126(127),BUFF2+127 PROPOGATE
614 AZ   SEQ(3),NUMONE      INCREMENT EBCDIC RECORD COUNTER
615 MVC  BUFF2+5(3),SEQ     AND PUT IT INTO BUFFER
616
617 CHGBUR B   ***      RETURN TO CALLER
618
618
618
618
619 *****
620 *   TOOBSY *
621 *****
622 *   BUSY TOO LONG (TIMEOUT) *
623 *
624 *****
625
626 TOOBSY EQU *
627 B     PRINT          BUSY TOO LONG
628 DC   XL1*C6*
629 DC   AL1(MSG15-MSG15B)

```

4042 3741 DIAGNOSTIC FUNCTION TEST

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
DEF3 1A2F                DEF4 630      DC      AL2(MSG15)
DEF5 408E                DEF6 631      DC      XL2*408E*
DEF7 C0 87 0222         632          B      HALT
DEFB 408E                DEF6 633 HT8E DC      XL2*408E*
DEFD C0 87 0D18         634          B      BLP
                                GO BACK THROUGH BUSY LOOP AGAIN
                                635
                                635
                                635
                                636 *****
                                637 * CMPEM *
                                638 *****
                                639 * CGMPARE ERROR *
                                640 *
                                641 *****
                                642
CF01 34 08 0F22         643 CMPEM ST   CMPERR+3,ARR   FOR RETURN
CF05 0C 02 1943 1C6B   644          MVC   MSG10(3),SEQ   PUT IN RECORD NUMBER
CF0B C0 87 021A         645          B      PRINT                COMPARE ERROR ON RECORD XXX
OF0F C2                OF0F 646      DC      XL1*C2*
OF10 27                OF10 647      DC      AL1(MSG10-MSG10B)
CF11 1943              OF12 648      DC      AL2(MSG10)
CF13 4089              OF14 649      DC      XL2*4089*
OF15 C0 87 0F23         650          B      EXPFND                PRINT EXPECTED AND FOUND DATA
OF19 C0 87 0222         651          B      HALT                COMPARE ERROR
CF1D 4089              OF1E 652 HT89 DC      XL2*4089*
CF1F C0 87 0000         653 CMPEM B   *-*                RETURN
                                654
                                654
                                654
                                655 *****
                                656 * EXPFND *
                                657 *****
                                658 * PRINTS EXPECTED (WRITTEN) DATA AND FOUND (READ) DATA
                                659 *
                                660 *****
                                661
OF23 34 08 0F42         662 EXPFND ST   EXPFNR+3,ARR   FOR RETURN
OF27 C0 87 021A         663          B      PRINT                DATA WRITTEN
OF2B 81                OF2B 664      DC      XL1*81*
OF2C 28                OF2C 665      DC      AL1(MSG20-MSG20B)
OF2D 1A57              OF2E 666      DC      AL2(MSG20)
CF2F C0 87 1103         667          B      DUMP2                DUMP EXPECTED BUFFER
OF33 C0 87 021A         668          B      PRINT                DATA READ
OF37 81                OF37 669      DC      XL1*81*
OF38 28                OF38 670      DC      AL1(MSG21-MSG21B)
OF39 1A7F              OF3A 671      DC      AL2(MSG21)
OF3B C0 87 10DF         672          B      DUMP1                DUMP DATA READ BUFFER
OF3F C0 87 0000         673 EXPFNR B   *-*                RETURN
                                674
                                674
                                674
                                675 *****
                                676 * SETER *
                                677 *****
                                678 * SET UP ERROR ROUTINE *
                                679 *
                                680 *****
                                681
OF43 34 08 0F88         682 SETER ST   SETERR+3,ARR   FOR RETURN
                                683
                                684          MVC   MSG3A(5),CREAD   ASSUME READ (S/3 WRITES)
                                685          CLI   DOSIO+1,SWRITE   WHERE WE IN A WRITE
                                686          JE    PRD
                                687
                                688          MVC   MSG3A(5),CWRITE   ASSUME READ (S/3 WRITES)

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```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
OF5A C0 87 021A         689 PRD      B      PRINT                *SET UP ERROR. XXXXX MODE EXPECTED.*
OF5E C2                OF5E 690      DC      XL1*C2*
OF5F 4A                OF5F 691      DC      AL1(MSG3-MSG3B)
OF60 1822              OF61 692      DC      AL2(MSG3)
OF62 4085              OF63 693      DC      XL2*4085*
                                694
                                695          TBN   SNS3-1,X*01*   READ MODE ON ?
OF68 F2 90 08         696          JF    RDOFF
OF6B C0 87 021A         697          B      PRINT                PRINT READ MODE FOUND ON
OF6F 86                OF6F 698      DC      XL1*86*
OF70 28                OF70 699      DC      AL1(MSG4-MSG4B)
OF71 184A              OF72 700      DC      AL2(MSG4)
                                701
                                702 RDOFF EQU *
                                703          TBN   SNS3-1,X*02*   WRITE MODE ON ?
OF73 38 02 1C7B         704          JF    WTOFF
OF77 F2 90 08         705          B      PRINT                PRINT WRITE MODE FOUND ON
OF7A C0 87 021A         OF7E 706      DC      XL1*86*
OF7E 86                OF7F 707      DC      AL1(MSG5-MSG5B)
OF7F 28                OF81 708      DC      AL2(MSG5)
                                709
                                710 WTOFF B      HALT                SET UP ERROR
OF82 C0 87 0222         OF87 711 HT85 DC      XL2*4085*
OF86 4085              712 SETERR B   *-*                RETURN TO CALLER
OF88 C0 87 0000         713
                                713
                                713
                                714 *****
                                715 * GETINT *
                                716 *****
                                717 * WAIT FOR AN INTERRUPT *
                                718 *
                                719 *****
                                720
OF8C 34 08 1013         721 GETINT ST   GETR+3,ARR   FOR RETURN
OF90 3C 07 0EA9         722          MVI   WSEC,7       WAIT 7 SEC FOR INTERRUPT
OF94 3D C5 0200         723          CLI   CPU,C*E*     IF THIS IS MODEL *E* (15) ENABLE INT
OF9B F2 81 23          724          JE    HNGINT
                                725
                                726 * WAIT FOR INTERRUPT PENDING
                                727 HNGPND SNS SNS2,SSTAT
                                728          MVC   SNS2(1),SNS2   SIMULATE SNSING IN INTERRUPT ROUTINE
                                729          TBN   SNS2-1,X*20*   IS INTERRUPT PENDING BIT ON ?
                                730          JT    INTOC
                                731          B      WAIT
                                732          B      NOIERR
                                733          B      HNGPND
                                734 INTOC SIO   SRESET,SCNTRL   RESET IT WHEN IT COMES
                                735          J      PEND
                                736
                                737 HNGINT EQU *
                                738          L      INT50,IARS   LOAD INTERRUPT 5 IAR.
                                739          SIO   SENAB,SCNTRL   ENABLE INTERRUPTS
                                740
                                741 HNGIT CLI   INTFLG,X*FF*   INTERRUPT RECEIVED YET ?
                                742          JE    PEND
                                743          B      WAIT
                                744          B      NOIERR
                                745          B      HNGIT
                                746
                                747 PEND MVI   INTFLG,X*00*   CLEAR INT FLAG
                                748          B      GETR
                                749
                                750 * FIRST SEE IF ON LINE.
                                751 NOIERR SNS SNS3,SLINES   SNS 1/0 TRANSFER LINES

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4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
0FE4	38 04 1C7B	752	TBN	SNS3-1,X*04*	ON-LINE ?
0FE8	C0 90 10C7	753	BF	OFFLN	IF NOT, GO HALT
		754			
0FEC	3D C5 0200	755	CLI	CPU.C*E*	IF MODEL 15, GIVE EXPECTED REAL INTS
0FF0	F2 81 0D	756	JE	NOIE	
		757			
0FF3	C0 87 021A	758	B	PRINT	INT PEND BIT NOT ON
0FF7	C6	0FF7 759	DC	XL1*C6*	
0FF6	28	0FF8 760	DC	AL1(MSG1-MSG1B)	
0FF9	1789	0FFA 761	DC	AL2(MSG1)	
0FFB	4084	0FFC 762	DC	XL2*4084*	
0FFD	F2 87 0A	763	J	NOIHT	
		764			
1000	C0 87 021A	765	NOIE B	PRINT	EXPECTED INTERRUPT DID NOT OCCUR
1004	C6	1004 766	DC	XL1*C6*	
1005	4F	1005 767	DC	AL1(MSG2-MSG2B)	
1006	17D8	1007 768	DC	AL2(MSG2)	
1008	4084	1009 769	DC	XL2*4084*	
		770			
100A	C0 87 0222	771	NOIHT B	HALT	INTERRUPT DID NOT OCCUR
100E	4084	100F 772	HT84 DC	XL2*4084*	
1010	C0 87 0000	773	GETR B	**	RETURN TO CALLER
		774			
		775	*****		
		776	* INTS *		
		777	*****		
		778	* INTERRUPT *		
		779	* ROUTINE *		
		780	*****		
1014	34 04 1C52	1014 781	INTS EQU *		
1018	30 42 1C82	782	ST	PSRSV,PSR	SAVE PSR
101C	3D FF 1C50	783	SNS	SNS21,SSTAT	SNS STATUS (DO BEFORE SIO TO RESET)
1020	3C 00 1C50	784	CLI	EXPFLG,X*FF*	INTERRUPT EXPECTED ?
1024	F2 81 0F	785	MVI	EXPFLG,X*00*	NOT AGAIN
		786	JE	WASEXP	
		787	* INT RECEIVED NOT EXPECTED FORCE A HALT.		
1027	C0 87 102B	788	B	**4	
102B	34 20 1C54	789	ST	PIARSV,PIAR	SAVE PROG LEVEL
102F	35 20 1C56	790	L	UNE@,PIAR	PREPARE PROG LEVEL
1033	F3 40 05	791	SIO	SRESET+SDISAB,SCNTRL	KILL INTERRUPT
		792			
		793	WASEXP EQU *		
1036	3A FF 1C5A	1036 794	SBN	INTFLG,X*FF*	SHOW INTERRUPT OCCURRED
103A	35 04 1C52	795	L	PSRSV,PSR	RESTORE PSR
103E	F3 40 01	796	SIO	SRESET,SCNTRL	RESET INTERRUPT
1041	C0 87 1014	797	B	INTS	
		798			
		799	UNE EQU *		
1045	C0 87 021A	800	B	PRINT	UNEXP INTERRUPT.
1049	C6	1049 801	DC	XL1*C6*	
104A	28	104A 802	DC	AL1(MSG11-MSG11B)	
104B	196B	104C 803	DC	AL2(MSG11)	
104D	4087	104E 804	DC	XL2*4087*	
		805			
104F	C0 87 0222	806	MNI B	HALT	UNEXPECTED INTERRUPT
1053	4087	1054 807	HT87 DC	XL2*4087*	
1055	C0 87 104F	808	B	MNI	
		809			
		810	*****		
		811	* BADMOD *		
		812	* *		
		813	*****		
		814	* READ MODE / WRITE MODE *		

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
		815	*	BOTH ON OR BOTH OFF.	*
		816	*****		
1059	34 08 10C6	817	BADMOR ST	BADMOR+3,ARR	FOR RETURN
		818	* PRINT BOTH	FOUND ON OR BOTH FOUND OFF.	
		819	TBN	SNS3-1,X*03*	SEE IF READ AND WRITE ON AT SAME TIME
105D	38 03 1C7B	820	JF	NOT2	
1061	F2 90 0D	821	B	PRINT	BOTH MODES ON
1064	C0 87 021A	822	DC	XL1*C2*	
1068	C2	1068 822	DC	AL1(MSG8-MSG8B)	
1069	28	1069 823	DC	AL2(MSG8)	
106A	18E9	1063 824	DC	AL2(MSG8)	
106C	4086	106D 825	DC	XL2*4086*	
106E	F2 87 0A	826	J	MDEXP	GO TELL HIM WHICH EXPECTED
		827			
		828	NOT2 B	PRINT	BOTH MODES OFF
1071	C0 87 021A	1075 829	DC	XL1*C2*	
1075	C2	1076 830	DC	AL1(MSG13-MSG13B)	
1076	27	1078 831	DC	AL2(MSG13)	
1077	19E1	107A 832	DC	XL2*408C*	
1079	408C	833			
		834	MDEXP CLI	JRW+1,X*87*	IF 87, NAME MODE EXPECTED
107B	3D 87 0CDD	835	JE	WHICH	
107F	F2 81 0B	836			
		837	B	PRINT	PRINT *EITHER MODE EXPECTED*
1082	C0 87 021A	1086 838	DC	XL1*86*	
1086	86	1087 839	DC	AL1(MSG14-MSG14B)	
1087	27	1089 840	DC	AL2(MSG14)	
1088	1ACB	841	J	BADHLT	GO PRINT WHICH FOUND
108A	F2 87 1B	842			
		843	WHICH EQU *		
108D	0C 04 1CDE 1C3B	844	MVC	MSG40A(5),CREAD	ASSUME READ (S/3 WRITES)
1093	3D 42 0D16	845	CLI	DOSIO+1.SWRITE	WHERE WE IN A WRITE ?
1097	F2 81 06	846	JE	PMD	
		847			
109A	0C 04 1CDE 1C40	848	MVC	MSG40A(5),CWRITE	ASSUME READ (S/3 WRITES)
10A0	C0 87 021A	849	PMD B	PRINT	PRINT MODE EXPECTED ON
10A4	86	10A4 850	DC	XL1*86*	
10A5	2D	10A5 851	DC	AL1(MSG40-MSG40B)	
10A6	1C36	10A7 852	DC	AL2(MSG40)	
		853			
		854	BADHLT EQU *		
10A8	38 03 1C7B	855	TBN	SNS3-1,X*03*	DECIDE FOR BOTH ON OR BOTH OFF HALT
10AC	F2 10 0A	856	JT	ONHLT	
10AF	C0 87 0222	857	OFFHLT B	HALT	READ/WRITE MODE BOTH OFF
10B3	408C	10B4 858	HT8C DC	XL2*408C*	
10B5	C0 87 10AF	859	B	OFFHLT	READ/WRITE MODE BOTH ON
10B9	C0 87 0222	860	CNHLT B	HALT	
10BD	4086	10BE 861	HT86 DC	XL2*4086*	
10BF	C0 87 10B9	862	B	ONHLT	
		863			
10C3	C0 87 0000	864	BADMOR B	**	RETURN
		865			
		866	*****		
		867	* OFFLN *		
		868	* *		
		869	*****		
		870	* 3741 IS OFF LINE.		
		871	*		
		872	*****		
10C7	34 08 10DE	873	OFFLN ST	OFFLNR+3,ARR	FOR RETURN
10CB	C0 87 021A	874	B	PRINT	OFF LINE
10CF	C6	10CF 875	DC	XL1*C6*	
10DD	27	10DD 876	DC	AL1(MSG23-MSG23B)	



4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
10D1 1AF5	10D2 877	DC	AL2(MSG23)
10D3 4080	10D4 878	DC	XL2*4080*
	879		
10D5 C0 87 0222	880	B	HALT
10D9 4080	10DA 881	HT80 DC	XL2*4080*
10DB C0 87 0000	882	OFFLNR B	*-*
	883		NOT ON-LINE
	883		RETURN
	883		
	883		
	883		
	884	*****	
	885	* DUMP1	*
	886	* *	*
	887	*****	
	888	* DUMPS CONTENTS OF BUFFER 1	*
	889	* *	*
	890	*****	
10DF 34 08 1102	891	DUMP1 ST	DUMP1R+3.ARR FOR RETURN
10E3 C0 87 021E	892	B	UNPACK UNPACK FIRST HALF OF 128 BYTE REC
10E7 40	10E7 893	DC	IL1*64*
10E8 1185	10E9 894	DC	AL2(BUFF1+63)
10EA 08FF	10EB 895	DC	XL2*8FF*
10EC C0 87 021A	896	B	PRINT DCP BUFFER
10FO A1	10F0 897	DC	XL1*A1*
	898		FROM OWN BUFFER
10F1 C0 87 021E	899	B	UNPACK UNPACK SECOND HALF OF 128 BYTE REC
10F5 40	10F5 900	DC	IL1*64*
10F6 11F5	10F7 901	DC	AL2(BUFF1+127)
10F8 08FF	10F9 902	DC	XL2*8FF*
10FA C0 87 021A	903	B	PRINT DCP BUFFER
10FE A6	10FE 904	DC	XL1*A6*
10FF C0 87 0000	905	DUMP1R B	*-* FROM OWN BUFFER
	906		RETURN TO CALLER
	906		
	906		
	906		
	906		
	907	*****	
	908	* DUMP2	*
	909	* *	*
	910	*****	
	911	* DUMPS CONTENTS OF BUFFER 2	*
	912	* *	*
	913	*****	
1103 34 08 1126	914	DUMP2 ST	DUMP2R+3.ARR FOR RETURN
1107 C0 87 021E	915	B	UNPACK UNPACK FIRST HALF OF 128 BYTE REC
1108 40	1108 916	DC	IL1*64*
110C 1235	110D 917	DC	AL2(BUFF2+63)
110E 08FF	110F 918	DC	XL2*8FF*
1110 C0 87 021A	919	B	PRINT DCP BUFFER
1114 A1	1114 920	DC	XL1*A1*
	921		FROM OWN BUFFER
1115 C0 87 021E	922	B	UNPACK UNPACK SECOND HALF OF 128 BYTE REC
1119 40	1119 923	DC	IL1*64*
111A 1275	1118 924	DC	AL2(BUFF2+127)
111C 08FF	111D 925	DC	XL2*8FF*
111E C0 87 021A	926	B	PRINT DCP BUFFER
1122 A2	1122 927	DC	XL1*A2*
1123 C0 87 0000	928	DUMP2R B	*-* FROM OWN BUFFER
			RETURN TO CALLER

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	930	*****	
	931	*	*
	932	* MESSAGES	*
	933	*	*
	934	*	*
	935	*	*
	936	*****	
	937	STATB EQU	*-1
1127 C960D640E309C1D5	1140	938	STATXX DC CL39*1-0 TRANSFER LINES -SENSE 3- XXXX*
112F E2C6C5094073C9D5	938		
1137 C5E2404040404040	938		
113F 60E2C5D5E2C540F3	938		
1147 604040E7E7E7E7	938		
114E 40404040404040C1	1175	939	STATMG DC CL40* ACTIVE LINE IS NAMED BELOW
1156 C3E3C9E5C540D3C9	939		
115E D5C540C9E240D5C1	939		
1166 D4C5C440C2C5D3D6	939		
116E E640404040404040	939		
	940		
	940		
	941	941	BUFF1 EQU *
1176	1175	942	DS CL128 READ BUFFER
	1176	943	943 BUFF2 EQU *
1176	1275	944	DS CL128 READ BUFFER
1276 40	1276	945	DC CL1*
	946		
1277 1176	1278	947	947 BUFF1B DC AL2(BUFF1) LEFT END OF READ FIELD
	948		
	948		
1279 C1E3E3C1C3C8D4C5	128C	949	949 STAB DC CL20*ATTACHMENT RST *
1281 D5E340D9E2E34040	949		
1289 40404040	949		
128D C5D5C440D6C640C4	12A0	950	DC CL20*END OF DATA SET *
1295 C1E3C140E2C5E340	950		
129D 40404040	950		
12A1 F3F7F4F140C2E4E2	12B4	951	DC CL20*3741 BUS IN PRTY ERR*
12A9 40C9D540D7D9E3E8	951		
12B1 40C5D9D9	951		
12B5 C5D5C440D6C640D9	12C8	952	DC CL20*END OF RECORD *
12B8 C5C3D6D9C4404040	952		
12C5 40404040	952		
12C9 C5D5C440D6C640D1	12DC	953	DC CL20*END OF JOB *
12D1 D6C2404040404040	953		
12D9 40404040	953		
12DD F3F7F4F140C1E3E3	12F0	954	DC CL20*3741 ATTENTION REQD *
12E5 C5D5E3C9D6D540D9	954		
12ED C5D8C440	954		
	955		
12F1 D9C5D406E5C540E6	1317	956	IN1A EQU *-1
12F9 D9C1D740C3D6D5D5	957	957	IN1B DC CL39*REMOVE WRAP CONNECTOR AND CONNECT 3741 *
1301 C5C3E3C6D940C1D5	957		
1309 C440C3D6D5D5C5C3	957		
1311 E340F3F7F4F140	957		
1318 C3C1C2D3C5E24040	133E	958	IN1C DC CL39*CABLE W. INSERT A SCRATCH DISKETTE *
1320 40C9D5E2C5D9E340	958		
1328 C140E2C3D9C1E3C3	958		
1330 C840C4C9E2D2C5E3	958		
1338 E3C54040404040	958		
133F D6D940E3C8C540C9	1365	959	IN1D DC CL39*OR THE I/O ADAPTER WRAP DIAGNOSTIC *
1347 61D640C1C4C1D7E3	959		
134F C5D940E6D9C.D740	959		
1357 C4C9C1C7D5D6E2E3	959		
135F C9C34040404040	959		
1366 C4C9E2D2C5E3E3C5	138C	960	IN1E DC CL39*DISKETTE. P/N 2469460. *
136E 6840D761D540F2F4	960		
1376 F6F9F4F6F04B4040	960		

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

137E 40404040404040 960  
138E 40404040404040 960  
138D E3C8C540F3F7F4F1 1383 961 IN1 DC CL39\*THE 3741 SHOULD DISPLAY HDR1 DISPLAY. \*

1395 40E2C8D6E4D3C440 961  
139D C4C9E2D7D3C1E840 961  
13A5 C8C4D9F140C4C9E2 961  
13AD D7D3C1E84B4040 961

1384 F3F7F4F140E2C8D6 1383 962 IN1X8 EQU \*-1  
13DA 963 IN1X DC CL39\*3741 SHOULD DISPLAY HDR1 DISPLAY \*

138C E4D3C440C4C9E2D7 963  
13C4 D3C1E840C8C4D9F1 963  
13CC 40C4C9E2D7D3C1E8 963  
13D4 40404040404040 963

13DA 964 IN2A EQU \*-1  
1401 965 IN2B DC CL39\*IF A SCRATCH DISKETTE IS USED. A DATA \*

13E3 C1E3C3C840C4C9E2 965  
13EB D2C5E3E3C540C9E2 965  
13F3 40E4E2C5C46B40C1 965  
13F8 40C4C1E3C14040 965

1402 E2C5E340E6C9E3C8 1428 966 IN2C DC CL39\*SET WITH 128 BYTE RECORDS AND TWO OR \*

140A 40F1F2F840C2E8E3 966  
1412 C540D9C5C3D6D9C4 966  
141A E240C1D5C440E3E6 966  
1422 D640D6D9404040 966

1429 D4D6D5C540C1E5C1 144F 967 IN2D DC CL39\*MORE AVAILABLE TRACKS MUST BE FOUND BY \*

1431 C9D3C1C2D3C540E3 967  
1439 D9C1C3D2E240D4E4 967  
1441 E2E340C2C540C6D6 967  
1449 E4D5C440C2E840 967

1450 C4C5D7D9C5E2E2C9 1476 968 IN2 DC CL39\*DEPRESSING -REC ADV.- \*

1458 D5C74060D9C5C340 968  
1460 C1C4E5604B404040 968  
1468 40404040404040 968  
1470 40404040404040 968

1476 969 ASTRKS EQU \*-1  
149D 970 ASTRK1 DC CL39\*\*\*\*\*\*

147F 5C5C5C5C5C5C5C5C 970  
1487 5C5C5C5C5C5C5C5C 970  
148F 5C5C5C5C5C5C5C5C 970  
1497 5C5C5C5C5C5C5C5C 970

149D 971 IN2XB EQU \*-1  
14C4 972 IN2XA DC CL39\*IF A SCRATCH DISKETTE WAS USED. DEPRESS\*

149E C9C640C140E2C3D9 14C4 972  
14A6 C1E3C3C840C4C9E2 972  
14AE D2C5E3E3C540E6C1 972  
1486 E240E4E2C5C46B40 972  
148E C4C5D7D9C5E2E2 972  
14C5 60D9C5C340C1C4E5 14EB 973 IN2X DC CL39\*-REC ADV- UNTIL SAME DATA SET AS BEFORE\*

14CD 6040E4D5E3C9D340 973  
14D5 E2C1D4C540C4C1E3 973  
14DD C140E2C5E340C1E2 973  
14E5 40C2C5C6D6D9C5 973

14EC C9E240C6D6E4D5C4 1512 974 IN2XC DC CL39\*IS FOUND. \*

14F4 4B40404040404040 974  
14FC 4040404040404040 974  
1504 4040404040404040 974  
150C 40404040404040 974

1513 60D5E4D440E2C8C9 1539 975 IN3B DC CL39\*-NUM SHIFT- TYPE #1 \*

1518 C6E3604040E3E8D7 975  
1523 C540F4F140404040 975  
152B 4040404040404040 975  
1533 40404040404040 975

153A 60C6E4D5C3E340E2 156D 976 IN3 DC CL39\*-FUNCT SEL UPPER- -INPUT- \*

1542 C5D340E4D7D7C5D9 976  
154A 60404063C9D5D7E4 976  
1552 E360404040404040 976  
155A 4040404040404040 976

1561 60C6E4D5C3E340E2 1587 977 IN3X DC CL39\*-FUNCT SEL UPPER- -OUTPUT- \*

1569 C5D340E4D7D7C5D9 977

4042 3741 DIAGNOSTIC FUNCTION TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

1571 60404060D6E4E3D7 977  
1579 E4E3604040404040 977  
1581 40404040404040 977

1587 978 IN4B EQU \*-1  
15AE 979 IN4A DC CL39\*WHEN SET UP IS COMPLETE. \*

1588 E6C8C5D540E2C5E3 15AE 979  
1590 40E4D740C9E240C3 979  
1598 D6D4D7D3C5E3C56B 979  
15A0 4040404040404040 979  
15A8 4040404040404040 979

15AF D9C5E2C5E340E2E8 15DE 980 IN4 DC CL39\*RESET SYSTEM/3 HALT. \*

1587 F2E3C5D461F340C8 980  
158F C1D3E34B40404040 980  
15C7 4040404040404040 980  
15CF 40404040404040 980

15DE 981 HD1B EQU \*-1  
15FC 982 HD1 DC CL39\*52 RECORDS WILL BE WRITTEN TO 3741 \*

15D6 F5F240D9C5C3D6D9 15FC 982  
15DE C4E240E6C9D3D340 982  
15E6 C2C540E6D9C9E3E3 982  
15EE C5D540E3D640F3F7 982  
15F6 F4F14040404040 982

15FC 983 HD2B EQU \*-1  
1624 984 HD2 DC CL40\*52 RECORDS WILL BE READ AND COMPARED \*

15FD F5F240D9C5C3D6D9 1624 984  
1605 C4E240E6C9D3D340 984  
160D C2C540D9C5C1C440 984  
1615 C1D5C440C3D6D4D7 984  
161D C1D9C5C440404040 984

1624 985 HD3B EQU \*-1  
1648 986 DC CL39\*SET UP 3741 TO READ OR WRITE. WHEN F6 \*

162D F7F4F140E3D640D9 986  
1635 C5C1C440D6D940E6 986  
163D D9C9E3C54B4040E6 986  
1645 C8C5D540C6F640 986  
164C C8C1D3E340C9E240 1673 987 DC CL40\*HALT IS RESET. SYSTEM 3 WILL READ OR \*

1654 D9C5E2C5E36B40E2 987  
165C E8E2E3C5D440F340 987  
1664 E6C9D3D340D9C5C1 987  
166C C440D6D940404040 987

1674 E6D9C9E3C540D6D5 169B 988 HD3 DC CL40\*WRITE ONE RECORD. \*

167C C540D9C5C3D6D9C4 988  
1684 4B40404040404040 988  
169C 4040404040404040 988  
1694 4040404040404040 988

169B 989 HD4B EQU \*-1  
16C2 990 DC CL39\*ONE RECORD WAS READ. RECORD IS PRINTED\*

169C D6D5C540D9C5C3D6 16C2 990  
16A4 D9C440E6C1E240D9 990  
16AC C5C1C4404040D9C5 990  
1684 C3D6D9C440C9E240 990  
168C D7C9C9D5E3C5C4 990  
16C3 40F240E3C9D4C5E2 16EA 991 DC CL40\* 2 TIMES. ONCE IN PRINTABLE EBCDIC. \*

16CB 4B4040D6D5C3C540 991  
16D3 C9D540D7D9C9D5E3 991  
16DB C1C2D3C540C5C2C3 991  
16E3 C4C9C36B40404040 991  
16EB D6D5C3C540C9D540 1712 992 HD4 DC CL40\*ONCE IN HEX. \*

16F3 C8C5E74B40404040 992  
16FB 4040404040404040 992  
1703 4040404040404040 992  
170B 4040404040404040 992

1712 993 HD5B EQU \*-1  
1739 994 DC CL39\*ONE RECORD WAS WRITTEN. DATA USED FOR \*

1713 D6D5C540D9C5C3D6 1739 994  
1718 D9C440E6C1E240E6 994  
1723 D9C9E3E3C5D54840 994  
172B 40C4C1E3C140E4E2 994  
1733 C5C440C6D6D940 994  
173A E6D9C9E3C540E6C1 1761 995 HD5 DC CL40\*WRITE WAS SAME AS PREVIOUSLY READ. \*

1742 E240E2C1D4C540C1 995  
174A E240D7D9C5E5C9D6 995  
1752 E4E2D3E840D9C5C1 995

4042 3741 DIAGNOSTIC FUNCTION TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains diagnostic data for program 4042.

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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1AEF 40404040404040 1038  
 1AF5 1039 MSG24B EQU \*-1  
 1AF6 4040C4E4D9C9D5C7 1B1C 1040 MSG24 DC CL39\* DURING READ FROM 3741 TO SYSTEM 3. \*  
 1AFE 40D9C5C1C440C6D9 1040  
 1B06 D6D440F3F7F4F140 1040  
 1B0E E3D640E2E8E2E3C5 1040  
 1B16 D44CF34B404040 1040  
 1B1C 1041 MSG25B EQU \*-1  
 1B1D 4040C4E4D9C9D5C7 1B43 1042 MSG25 DC CL39\* DURING WRITE TO 3741 FROM SYSTEM 3. \*  
 1B25 40E6D9C9E3C540E3 1042  
 1B2D D640F3F7F4F140C6 1042  
 1B35 D9D6440E2E8E2E3 1042  
 1B3D C5D440F34B4040 1042  
 1B43 1043 MSG26B EQU \*-1  
 1B44 60C5D5C440D6C640 1B6A 1044 DC CL39\*-END OF RECORD- LINE NOT ACTIVE AFTER \*  
 1B4C D9C5C3D6D9C46040 1044  
 1B54 C3C9D5C540D5D6E3 1044  
 1B5C 40C1C3E3C9E5C540 1044  
 1B64 C1C6E3C5D94040 1044  
 1B6B E3C9C1D5E2C6C5D9 1B92 1045 MSG26 DC CL40\*TRANSFER OF A 128 BYTE RECORD. \*  
 1B73 40D6C640C140F1F2 1045  
 1B7B F840C2E8E3C540D9 1045  
 1B83 C5C3D6D9C44B4040 1045  
 1B8B 4040404040404040 1045  
 1B92 1046 MSG27B EQU \*-1  
 1B93 4040D5D6E3C56040 1B89 1047 DC CL39\* NOTE- THIS ERROR CAN BE CAUSED BY \*  
 1B9B 40E3C8C9E240C5D9 1047  
 1BA3 D9D6D940C3C1D540 1047  
 1BAB C2C540C3C1E4E2C5 1047  
 1BB3 C440C2E8404040 1047  
 1BBA E4E2C9D5C740C140 1BE1 1048 DC CL40\*USING A 3741 DATA SET WHOSE RECORDS ARE \*  
 1BC2 F3F7F4F140C4C1E3 1048  
 1BCA C140E2C5E340E6C8 1048  
 1BD2 D6E2C540D9C5C3D6 1048  
 1BDA D9C4E240C1D9C540 1048  
 1BE2 D5D6E340F1F2F840 1CC9 1049 MSG27 DC CL40\*NOT 128 BYTES IN LENGTH. \*  
 1BEA C2E8E3C5E240C9D5 1049  
 1BF2 40D3C5D5C7E3C84B 1049  
 1BFA 4040404040404040 1049  
 1C02 4040404040404040 1049  
 1050  
 1051  
 1052  
 1053  
 1054  
 1055  
 1056  
 1057  
 1058  
 1C09 1059 MSG40B EQU \*-1  
 1C0E 1060 MSG40A DC CL5\*  
 1C0F 40D4D6C4C540C5E7 1C36 1061 MSG40 DC CL40\* MODE EXPECTED ON. \*  
 1C17 D7C5C3E3C5C440D6 1061  
 1C1F D54B404040404040 1061  
 1C27 4040404040404040 1061  
 1C2F 4040404040404040 1061  
 1062  
 1C37 40D9C5C1C4 1C38 1063 CREAD DC CL5\* READ\*  
 1C3C E6D9C9E3C5 1C40 1064 CWRITE DC CL5\* WRITE\*  
 1065 \*\*\*\*\*  
 1066 \* \*  
 1067 \* \*  
 1068 \* DC'S \*  
 1069 \* \*  
 1070 \* \*  
 1071 \* \*  
 1072 \*\*\*\*\*  
 1073

1C41 0000 1C42 1074 S DC XL2\*0000\* \* CONTAINS SWITCHES AS SENSED  
 1C43 00 1C43 1075 S1 DC XL1\*00\* \*  
 1C44 00 1C44 1076 S2 DC XL1\*00\* \* KEEP TOGETHER AND LENGTH 6  
 1C45 00 1C45 1077 S3 DC XL1\*00\* \*  
 1C46 00 1C46 1078 S4 DC XL1\*00\* \*  
 1C47 0001 1C48 1079 ONE DC XL2\*0001\*  
 1C49 00C2 1C4A 1080 TWO DC XL2\*0002\*  
 1C4B 0000 1C4C 1081 ZERO DC XL2\*0000\*  
 1C4D F900 1C4E 1082 XF900 DC XL2\*F900\* FOR WRAP CONNECTOR SNS  
 1C4F 55 1C4F 1083 INCVAL DC IL1\*85\* BUMPS \*CHAR\*  
 1C50 00 1C50 1084 EXPFLG DC XL1\*00\*  
 1C51 0000 1C52 1085 PSRSV DC XL2\*0000\*  
 1C53 0000 1C54 1086 PIARSV DC XL2\*0000\*  
 1C55 1045 1C56 1087 UNE# DC AL2(UNE) ADDRESS OF FORCED HALT DUE TO UNEXP INT  
 1C57 00 1C57 1088 CHAR DC AL1(\*--\*)  
 1C58 1014 1C59 1089 INT5# DC AL2(INT5#)  
 1C5A 00 1C5A 1090 INTFLG DC AL1(\*--\*)  
 1C5B 00 1C5B 1091 RECCTR DC AL1(\*--\*)  
 1C5C F0F0 1C5D 1092 CTBUF DC XL2\*F0F0\*  
 1C5E F0F0 1C5F 1093 Z0 DC XL2\*F0F0\*  
 1C60 F0F1 1C61 1094 Z1 DC XL2\*F0F1\*  
 1C62 F0F2 1C63 1095 Z2 DC XL2\*F0F2\*  
 1C64 000C 1C65 1096 CTR DC XL2\*0000\*  
 1C66 F0F0F1 1C68 1097 NUMONE DC XL3\*F0F0F1\*  
 1C69 000000 1C6B 1098 SEQ DC XL3\*000000\*  
 1C6C 00 1C6C 1099 QWORK DC XL1\*00\*  
 1C6D 0000 1C6E 1100 WORK DC XL2\*0\*  
 1C6F 000C 1C70 1101 DC XL2\*0\*  
 1C71 007F 1C72 1102 LENGTH DC XL2\*007F\* 255-L (EG. 255-128 = 127 = X\*7F\*)  
 1C73 0000 1C74 1103 X0000 DC XL2\*0000\*  
 1C75 4000 1C76 1104 FUNBIT DC XL2\*4000\* EB-1 BIT 0 \*6 USEC PULSES \*  
 1C77 0000 1C78 1105 SNS1 DC XL2\*0000\*  
 1C79 0000 1C7A 1106 SNS2 DC XL2\*0000\*  
 1C7B 0000 1C7C 1107 SNS3 DC XL2\*0000\*  
 1C7D 0000 1C7E 1108 SNS4 DC XL2\*0000\*  
 1C7F 0000 1C80 1109 SNS5 DC XL2\*0000\*  
 1C81 0000 1C82 1110 SNS21 DC XL2\*0000\*  
 1C83 0000 1C84 1111 SNS DC XL2\*0000\* FOR INTERRUPT LEVEL SENSING  
 1C85 0000 1C86 1112 SENS0 DC XL2\*0000\*  
 1C87 0000 1C88 1113 SENS1 DC XL2\*0000\*  
 1C89 0000 1C8A 1114 SENS2 DC XL2\*0000\*  
 1C8B 0000 1C8C 1115 SENS3 DC XL2\*0000\*  
 1C8D 0000 1C8E 1116 SENS4 DC XL2\*0000\*  
 1C8F 0000 1C90 1117 SENS5 DC XL2\*0000\*  
 1C91 0000 1C92 1118 SENS6 DC XL2\*0000\*  
 1119 \*\*\*\*\*  
 1120 \* \*  
 1121 \* EQUATES \* \*  
 1122 \* \* \*  
 1123 \* \* \*  
 1124 \* \* \*  
 1125 \*\*\*\*\*  
 1126 \*\*\*\*\*  
 1127 \*\*\*\*\*  
 1128 \* STANDARD DCP EQUATES \* \*  
 1129 \*\*\*\*\*  
 0222 1130 HALT EQU X\*222\*  
 0216 1131 LINK EQU X\*216\*  
 021A 1132 PRINT EQU X\*21A\*  
 0212 1133 TEST EQU X\*212\*  
 021E 1134 UNPACK EQU X\*21E\*  
 0020 1135 PIAR EQU X\*20\*  
 0200 1136 CPU EQU X\*200\* PROGRAM INSTRUCTION ADDRESS REGISTER  
 0001 1137 XR1 EQU 01 LOCATION OF CPU MODEL LETTER.  
 0002 1138 XR2 EQU 02  
 000B 1139 ARR EQU X\*0B\*  
 0004 1140 PSR EQU X\*04\*  
 00C0 1141 IAR1 EQU X\*CO\*

4042 3741 DIAGNOSTIC FUNCTION TEST

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
0084 1142 IARS EQU X'84'
0C20 1143 PIAR EQU X'20'
0200 1144 SYSTEM EQU 512
0226 1145 PACK EQU X'226'
022A 1146 LOAD EQU X'22A'
0080 1147 BIT0 EQU X'80'
0040 1148 BIT1 EQU X'40'
0020 1149 BIT2 EQU X'20'
0010 1150 BIT3 EQU X'10'
0008 1151 BIT4 EQU X'08'
0004 1152 BIT5 EQU X'04'
0002 1153 BIT6 EQU X'02'
0001 1154 BIT7 EQU X'01'
0208 1155 SBYTE0 EQU X'0208'
020A 1156 SBYTE2 EQU X'020A'
020B 1157 SBYTE3 EQU X'020B'
0020 1158 SSW02 EQU X'20'
0008 1159 SSW04 EQU X'08'
0001 1160 SSW07 EQU X'01'
0080 1161 SSW10 EQU X'80'
0040 1162 SSW11 EQU X'40'
0020 1163 SSW12 EQU X'20'
0010 1164 SSW13 EQU X'10'
0008 1165 SSW14 EQU X'08'
0004 1166 SSW15 EQU X'04'
0002 1167 SSW16 EQU X'02'
0001 1168 SSW17 EQU X'01'
0080 1169 SSW18 EQU X'80'
0040 1170 SSW19 EQU X'40'
0020 1171 SSW1A EQU X'20'
0001 1172 SSW2F EQU X'01'
1173
0034 1174 NUMREC EQU 52 READ 52 RECORDS
0014 1175 SLEN EQU 20
1176
1177 *****
1178 * EQUATE USE FOR PROGRAM CODING *
1179 *****
0003 1180 H1 EQU X'03'
0071 1181 HZ EQU X'71'
003C 1182 HF EQU X'3C'
007C 1183 HE EQU X'7C'
0068 1184 HL EQU X'68'
006F 1185 H0 EQU X'6F'
0076 1186 H2 EQU X'76'
0057 1187 H3 EQU X'57'
001B 1188 H4 EQU X'1B'
005D 1189 H5 EQU X'5D'
007D 1190 H6 EQU X'7D'
0007 1191 H7 EQU X'07'
007F 1192 H8 EQU X'7F'
005F 1193 H9 EQU X'5F'
003F 1194 HA EQU X'3F'
0079 1195 HB EQU X'79'
006C 1196 HC EQU X'6C'
0073 1197 HD EQU X'73'
0004 1198 HUP EQU X'04'
0040 1199 HDN EQU X'40'
1200 *****
1201 *
1202 * EQUATES FOR 3741
1203 *
1204 *****
1205
1206 * T10
1207
0040 1208 TNR EQU X'40' T10 NOT READY OR ERROR
0042 1209 TBSY EQU X'42' T10 FOR BUSY

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4042 3741 DIAGNOSTIC FUNCTION TEST

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
1210
1211 * L10
1212
0041 1213 LFUNC EQU X'41' L10 FUNCTION REGISTER
0042 1214 LLCR EQU X'42' L10 LENGTH COUNT REGISTER
0044 1215 LDAR EQU X'44' L10 DATA ADDRESS REGISTER
0045 1216 LDTR EQU X'45' L10 DATA TRANSFER REGISTER
1217
1218 * S10
1219
0040 1220 SCNTRL EQU X'40' S10 CONTROL INTERRUPT STATUS
0041 1221 SREAD EQU X'41' S10 READ
0042 1222 SWRITE EQU X'42' S10 WRITE
0043 1223 SCTL1 EQU X'43' S10 I/O CONTROL 1
0044 1224 SCTL2 EQU X'44' S10 I/O CONTROL 2
1225
1226 * SNS
1227
0041 1228 SFUNR EQU X'41' SNS FUNCTION REGISTER
0042 1229 SSTAT EQU X'42' SNS CCR + STATUS (STAT=EB2)
0043 1230 SLINES EQU X'43' SNS I/O TRANSFER LINES
0044 1231 SDAR EQU X'44' SNS DATA ADDRESS REGISTER (DAR)
0045 1232 SDXFR EQU X'45' SNS DATA TRANSFER + DIAG (DIAG=EB2)
1233
1234 * R-BYTES FOR SID 0
1235
1236 * BIT
0001 1237 SRESET EQU X'01' 7 SID I-R RESET INTERRUPT
0002 1238 SENAB EQU X'02' 6 SID I-R ENABLE INTERRUPTS
0004 1239 SDISAB EQU X'04' 5 SID I-R DISABLE INTERRUPTS
0008 1240 SNBSY EQU X'08' 4 SID I-R FORCE NOT BUSY
0010 1241 SUPINT EQU X'10' 3 SID I-R SET INTERRUPT REQUEST
1242
1243 * ERROR MASKS SNS-3
1244
1245 *
0040 1246 EDS EQU X'40' END OF DATA SET
0020 1247 BIPE EQU X'20' BUSS IN PARITY ERROR
0010 1248 EDR EQU X'10' END OF RECORD
0008 1249 EOJ EQU X'08' END OF JOB
0004 1250 AT EQU X'04' 3741 ATTENTION
1251 *
1252
1253 * I/O SELECT
1254 * LINE #
1255 * 1-2
0004 1256 RSU EQU X'04' 3 SET UP ERROR (READ VS. WRITE MODE)
0008 1257 RE EQU X'08' 4 RESPONSE
0010 1258 RSR EQU X'10' 5 SENSE RESPONSE
0020 1259 REOD EQU X'20' 6 END OF DATA SET
0040 1260 REOJ EQU X'40' 7 END OF JOB
0080 1261 BOPE EQU X'80' 8 BUS OUT PARITY ERROR
FFFF 1262 END

```



4042 3741 DIAGNOSTIC FUNCTION TEST

4042 3741 DIAGNOSTIC FUNCTION TEST

CROSS-REFERENCE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
IN2XC	A	039	1512	0974	0122 0213 0214 0227
IN3	A	039	1560	0976	0126 0127 0231
IN3B	A	039	1539	0975	0122 0123 0126 0227 0228
IN3X	A	039	1587	0977	0231 0232
IN4	A	039	1505	0980	0134 0135 0239 0240
IN4A	A	039	15A0	0979	0130 0131 0134 0235 0236 0239
IN4B	A	001	1587	0978	0130 0235
ISBSY	A	004	0D23	0395	0393
ISREAD	A	001	0CFA	0378	0371
ISWRIT	A	001	0CEB	0372	
JRW	A	003	0CCF	0359	0040* 0294* 0834
KEEPOK	A	004	0C69	0305	0301
LCRHLT	A	004	0DD5	0481	0483
LDAR	C	001	0044	1215	0386*
LDTR	C	001	0045	1216	0139*
LENGTH	A	002	1C72	1102	0385
LFUNC	C	001	0041	1213	0038*
LINK	C	001	0216	1131	
LLCR	C	001	0042	1214	0385*
LOAD	C	001	022A	1146	0283
LOOP2	A	004	0C5C	0300	0314 0325
MDEXP	A	004	1078	0634	0826
MODEOK	A	001	0D36	0383	0364 0367 0376
MSG1	A	040	1789	0997	0760 0761
MSG1B	A	001	1761	0996	0760
MSG10	A	039	1943	1018	0644* 0647 0648
MSG10B	A	001	191C	1017	0647
MSG11	A	040	1968	1020	0802 0803
MSG11B	A	001	1943	1019	0802
MSG12	A	040	198A	1023	0273 0274
MSG12B	A	001	1968	1021	0273
MSG13	A	039	19E1	1025	0830 0831
MSG13B	A	001	198A	1024	0830
MSG14	A	039	1A08	1027	0839 0840
MSG14B	A	001	19E1	1026	0839
MSG15	A	039	1A2F	1029	0629 0630
MSG15B	A	001	1A08	1028	0629
MSG2	A	040	17D8	1000	0767 0768
MSG2B	A	001	1789	0998	0767
MSG20	A	040	1A57	1031	0665 0666
MSG20B	A	001	1A2F	1030	0665
MSG21	A	040	1A7F	1033	0670 0671
MSG21B	A	001	1A57	1032	0670
MSG22	A	040	1ACE	1036	0147 0148
MSG22B	A	001	1A7F	1034	0147
MSG23	A	039	1AF5	1038	0876 0877
MSG23B	A	001	1ACE	1037	0876
MSG24	A	039	1B1C	1040	0437 0438
MSG24B	A	001	1AF5	1039	0437
MSG25	A	039	1B43	1042	0443 0444
MSG25B	A	001	1B1C	1041	0443
MSG26	A	040	1B92	1045	0491 0492
MSG26B	A	001	1B43	1043	0491
MSG27	A	040	1C09	1049	0479 0480
MSG27B	A	001	1B92	1046	0479
MSG3	A	040	1822	1003	0691 0692
MSG3A	A	034	17FA	1002	0684* 0688*
MSG3B	A	001	17D8	1001	0691
MSG4	A	040	184A	1005	0699 0700
MSG4B	A	001	1822	1004	0699
MSG40A	A	040	1C36	1061	0851 0852
MSG40B	A	005	1C0E	1060	0844* 0848*
MSG40C	A	001	1C09	1059	0851
MSG5	A	040	1872	1007	0707 0708
MSG5B	A	001	184A	1006	0707
MSG6	A	040	189A	1009	0415 0416

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
MSG6B	A	001	1872	1008	0415
MSG7	A	039	18C1	1011	0429 0430
MSG7B	A	001	189A	1010	0429
MSG8	A	040	18E9	1013	0823 0824
MSG8B	A	001	18C1	1012	0823
MSG9	A	012	191C	1016	0470 0474 0475
MSG9B	A	001	18E9	1014	0474
NGDTPE	A	001	0D98	0450	0425
NGIE	A	004	1000	0765	0756
NOIERR	A	004	0FE0	0751	0732 0744
NOIHT	A	004	100A	0771	0763
NGOPDK	A	004	0D60	0424	0410
NORAP	A	001	0ED1	0611	0605 0609
NOT2	A	004	1071	0828	0820
NUMONE	A	003	1C68	1097	0162 0253 0614
NUMREC	C	001	0034	1174	0157 0248
OFFHLT	A	004	10AF	0857	0859
OFFLN	A	004	10C7	0873	0350 0753
OFFLNR	A	004	10DB	0882	0873*
OLDSEC	A	006	0E77	0576	0572
ONE	A	002	1C48	1079	0170 0261
ONHLT	A	004	1059	0860	0856 0862
Pa	A	002	0E4F	0548	0543*
PACK	C	001	0226	1145	
PEHALT	A	004	0D92	0446	0440
PEND	A	004	0FD8	0747	0735 0742
PEREAD	A	001	0D7B	0434	
PEWRIT	A	004	0D8A	0441	0433
PIAR	C	001	0020	1135	0789 0790*
PIARSV	A	002	1C54	1086	0789*
PMD	A	004	10A0	0649	0846
PRD	A	004	0F5A	0689	0686
PRINT	C	001	021A	1132	0043 0048 0052 0056 0060 0064 0068 0072 0076 0078 0082 0086 0090 0094 0098 0102 0106 0110 0114 0116 0120 0124 0128 0132 0143 0145 0184 0189 0193 0197 0201 0203 0207 0211 0215 0219 0221 0225 0229 0233 0237 0271 0295 0310 0316 0322 0413 0427 0435 0441 0472 0477 0489 0526 0545 0627 0645 0663 0668 0689 0697 0705 0758 0765 0800 0821 0828 0837 0849 0874 0896 0903 0919 0926 0782 0795*
PSR	C	001	0004	1140	
PSRSAY	A	002	1C52	1085	0782* 0795
PIIAR	C	001	0020	1143	
QWORK	A	001	1C6C	1099	
RDDONE	A	004	0C88	0316	0309
RDOFF	A	001	0F73	0702	0696
RE	C	001	0008	1257	0281 0384 0501 0520
RECCTR	A	001	1C5B	1091	0157* 0170* 0248* 0261*
REDD	C	001	0020	1259	
REOJ	C	001	0040	1260	0177 0412
RLOOP	A	004	0BF8	0258	0264
RSR	C	001	0010	1258	0177 0412 0426 0465
RSU	C	001	0004	1256	
RTN01	A	001	0A0D	0031	0017
RTN02	A	001	0C4A	0290	0033
RW	A	004	0CA3	0340	0169 0258 0306
RWR	A	004	0DF9	0502	0342*
S	A	002	1C42	1074	
SBYTE0	C	001	0208	1155	
SBYTE2	C	001	020A	1156	0300
SBYTE3	C	001	020B	1157	
SCNTLR	C	001	0040	1220	0178 0280 0307 0734 0739 0791 0796
SCTL1	C	001	0043	1223	0177 0281 0384 0412 0426 0465 0501 0520
SCTL2	C	001	0044	1224	
SDAR	C	001	0044	1231	
SDISAB	C	001	0034	1239	0178 0280 0307 0791
SDXFR	C	001	0045	1232	

4042 3741 DIAGNOSTIC FUNCTION TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SENAB	C	001	0002	1238	0739
SENS	A	002	1C84	1111	
SENS0	A	002	1C86	1112	
SENS1	A	002	1C88	1113	
SENS2	A	002	1C8A	1114	
SENS3	A	002	1C8C	1115	
SENS4	A	002	1C8E	1116	
SENS5	A	002	1C90	1117	
SENS6	A	002	1C92	1118	
SEQ	A	003	1C6B	1098	0162* 0163 0253* 0254 0614* 0615 0644
SETER	A	004	0F43	0682	0375 0381
SETERR	A	004	0F88	0712	0682*
SETPT	A	001	0E44	0542	0539
SFUNR	C	001	0041	1228	
SLEN	C	001	0014	1175	0540 0547
SLINES	C	001	0043	1230	0140 0268 0345 0403 0751
SNOBSY	C	001	0C08	1240	
SNOTBY	A	001	0D2F	0398	0394
SNS1	A	002	1C78	1105	
SNS2	A	002	1C7A	1106	0404* 0409 0424 0457 0469 0727* 0728 0729
SNS2I	A	002	1C82	1110	0404 0728* 0783*
SNS3	A	002	1C7C	1107	0140* 0141 0268* 0269 0345* 0346 0349 0353 0355 0363 0373 0374 0379 0380 0403* 0452 0486 0515 0516 0524 0537 0695 0703 0751* 0752 0819 0855
SNS4	A	002	1C7E	1108	
SNS5	A	002	1C80	1109	
SPLDOP	A	006	0E33	0538	0541
SREAD	C	001	0041	1221	0249 0308 0366 0370
SRESET	C	001	0C01	1237	0734 0791 0796
SSTAT	C	001	0042	1229	0727 0783
SSW02	C	001	0020	1158	
SSW04	C	001	0C08	1159	
SSW07	C	001	0001	1160	
SSW1A	C	001	0020	1171	
SSW10	C	001	0080	1161	
SSW11	C	001	0040	1162	
SSW12	C	001	0020	1163	
SSW13	C	001	0010	1164	
SSW14	C	001	0C08	1165	
SSW15	C	001	0034	1166	0300
SSW16	C	001	0002	1167	
SSW17	C	001	0001	1168	
SSW18	C	001	0080	1169	
SSW19	C	001	0040	1170	
SSW2F	C	001	0001	1172	
STAB	A	020	128C	0949	0536
STATB	A	001	1126	0937	0528
STATER	A	001	0DFD	0512	0347 0453
STATMG	A	040	1175	0939	0528 0529
STATRR	A	004	0E56	0553	0513* 0517
STATXX	A	039	1140	0938	0525
STAT1	A	001	0E0F	0519	0514
SUPINT	C	001	0010	1241	
SWRITE	C	001	0042	1222	0158 0362 0432 0685 0845
SYSTEM	C	001	0200	1144	
S1	A	001	1C43	1075	
S2	A	001	1C44	1076	
S3	A	001	1C45	1077	
S4	A	001	1C46	1078	
TBSY	C	001	0042	1209	0393 0399
TEST	C	001	0212	1133	
TNR	C	001	0040	1208	
TGDBSY	A	001	0EED	0626	0396
TWD	A	002	1C4A	1080	
UDT1	A	003	0A0C	0019	
UNE	A	001	1045	0799	1087

4042 3741 DIAGNOSTIC FUNCTION TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
UNE0	A	002	1C56	1087	0790
UNPACK	C	001	021E	1134	0467 0522 0892 0899 0915 0922
WAIT	A	001	0E5A	0569	0395 0461 0731 0743
WAITBY	A	004	0D1C	0393	0397
WAITR	A	004	0EA2	0584	0570* 0582 0583*
WAITRN	A	006	0E9C	0583	0579
WASEXP	A	001	1036	0793	0786
WCNT	A	002	0EA7	0586	0575* 0578* 0580*
WHICH	A	001	108D	0843	0835
WLOOP	A	001	0B29	0167	0173
WOPK	A	002	1C6E	1100	0537* 0538 0538*
WRPOFF	A	001	0B05	0150	0142
WSEC	A	002	0EA9	0587	0392* 0460* 0571 0573 0574 0574* 0722*
WSECA	A	002	0EAB	0588	0573* 0581*
WTOFF	A	004	0F82	0710	0704
W0001	A	002	JEAF	0590	0578 0581
W0004	A	002	0EB1	0591	0583
W1	A	004	0DAB	0461	0463
W1000	A	002	0EAD	0589	0575 0580
XF900	A	002	1C4E	1082	0141
XR1	C	001	0001	1137	0536* 0540 0540* 0543
XR2	C	001	0002	1138	
X0000	A	002	1C74	1103	
X404	A	001	0000	0005	
ZERO	A	002	1C4C	1081	0139
Z0	A	002	1C5F	1093	
Z1	A	002	1C61	1094	
Z2	A	002	1C63	1095	

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0





4042 3741 DIAGNOSTIC FUNCTION TEST

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+/LCPE1*PE1*PE1	*PE1*PE1*PE1*PE1	*2*R'0MCS0'XA80	H<KLI8_EB= E6+S	ABUCUBXPDE4CD1)	R1;H'9R640420043
T+/L=8MCR1*(0*L	V0DCUS; I44CS0)L	E6<LAB8E'8XPT6<G	S6<.E1_S'R1*XS6<S	09(PDK4A'EDA'EDA	'ED'ED440420044
T+/M9EDA'EDA'EDA	'EDA'EDA'EDA'EDA	-5;LM6+.H2*STQDA	'B=TP1MC4@MA'EDA	'EDA'EDA'EDA'EDA	'ED'ED440420045
T+/N4Q<SUS* T6+	E44CUS'-E6DA'&FC	IS)-UB6A'EDA'EDA	'EDA'EDA'Q<SUS*	T6+.E44CUS'-E6DA	'EF'ED440420046
T+/O75)LT5=LTQDA	'EDA'EDA'EDA'&+S	H1)N'8XPT6+L'F6<X	S6< 05(-L1; EE4A	'EDA'EDA'EDA'EDA	'E(U'ED440420047
T+/PD1;.EB4CS:+.	T1)J/@4CH0) TK4A	'EDA'EDA'EDA'EDA	'EDA'EDCS@UCR1*	06*LS6+S14*(0XN	'9_U'ED440420048
T+/QV2; T1)N'8'R	'@'@MA'EDA'-'I	'6*PCS_XDBUCW2)	L6<.E6(XE0*J'0)P	D6< 05(-A6*PD&DA	'E+H'ED440420049
T+/R-1:(9('0M-	4@MCT5UCR1*GD&(S	R6+S'R2; EK4A'9XT	E5MCF'UCH0) T6<X	S6(XE8XPT64CS:+.	T1)E'9#ED440420050
T+/E5E ('9XL44C	R1*GD&(SR&DA'&+S	R2; E6(\$N1MCR1*	06*J.EDA'EDA'EDA	'EDA'EDA'EDA'EDA	'ED'ED440420051
T+/S05_P&E(XE0'S	R1DCW0;I'6*PAID_	'E(XE0'SR1DC18UC	P6*XN8@PD& I'8&X	M1;I'6DC05* E6<X	N6(*'ZY40420052
T+/*J6*XN8@GB4@N	'1*.C1<XCE4A'EDC	05* E6<XN6<TE9A_	'EDA'EDA'EDA'EDA	'EDA'EDA'EDA'EDA	'ED'ED440420053
T+/> E(\$N1MCF1*	06*J'9XGS6+S'R2;	T1)N.&DCD0; A6+L	S1*J'1_S'R6+S'K2;	E6+SABUCES; LEE<G	S6(*'PCH40420054
T+/;G6*PV2)SUB_	Y6(XE0*J.EDA'EDA	'Q<XN8@PR6;LP84C	P1)PD2)P60DCB2;(	'1<XD&(P084CC5_L	EE(Q'N/<40420055
T+/~B5MC15; E6)X	U5=(4@PV1)(MC	D2*J'5)ST&(S'CO=L	R6<GF8@PR& )8XP	CE_PDBU_5DA'EDA	'ED'ED440420056
T+/~EDA'EDA'EDA	'EDA'EDA'EDA'EDA	'E 7* E'8XPT6+L	P6<XME'X05@PR4=/'	'EDA'EDA'&+~X9=)	'5(Q'9/Y40420057
T+/~81<N'1;~P1*	T1*J'5_N.EDA'EDA	'EDA'EDA'EDA'EDA	'EDA'E(XE0*J'5(S	D1MCF5>LN1DC05M_	'ED'ED440420058
T+//3EDA'EDA'EDA	'EDA'EDA'EDA'9_X	IE&N'5(\$D1MCF5>L	N1DC05M_'EDA'EDA	'EDA'EDA'EDA'EDA	'E+H'ED440420059
T+/>S>2)R'5)R-5_)	'EDA'EDA'EDA'EDA	'EDA'EDA'EDA'EDA	'EDA'EDA'1<GT0MC	T6*GN8XSE6MCR1*~	18><'8,U40420060
T+/TZ1)V'5@GR2;	Y6<PR6)SR&DA'&<.	08@/'6*PA1DCA5*J	'9_XI8@N'5(\$D1MC	W1)XE6(\$NK4A'EDA	'ED'ED440420061
T+/UU4@PN1= H6<	09(PT6(XE1@XS8@P	R6<PR6)SRK4CE9'~	E0= E1DA'1XR,&<S	06(PD&+~X0'SMS@G	R1M'ED440420062
T+/V~1)XR5_V.EDA	'EDCR1* 0E*J'5;L	MCXPR&DA'&+~X9=L	N1;~P1* T1*J'2)F	T1)XR9(-TK4A'EDA	'ED'ED440420063
T+/WEEDA'EDA'EDA	'EDA'Q<PN1DC01UC	JEXI-E( I5*N'5)S	T6<GC8@XV1MCA1>	E6MA'EDA'6*PA1<X	N14'ED440420064

4042 3741 DIAGNOSTIC FUNCTION TEST

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+/XNO) L6(XE0'S	R1+I'5XR'1<GT0MC	S1;(.EDA'EDA'EDC	R1*GD&(LO1<N'0)P	D6+S'R2; E6(L01<N	'0_0'ED440420065
T+/Y69@/5X\$FK4A	'EDA'1;~P1* T1*J	'1*XT2<PR6(XE0*J	'5_V'9_XI8@N'5(S	D1M_'EDA'@M~4@MC	B9+H'ED440420066
T+/Z.:DCT5_R'4'S	N14_'EDA'EDA'EDA	'EDA'EDA'EDA'&<L	A8&E'5'XE9*X09+.	L:DCW6*XT8@PN6+S	ABU'6C'40420067
T+/DFEDA'EDA'EDA	'EDA'1<GT0MCR1*G	D6<.A0'I'9XGS&DA	'EDA'EDA'EDA'EDA	'EDA'EDA'E1-PFA	*0E0'ED440420068
T+/A&DA'8@TE&+S	R0))'0'SN5*PC8'S	R6<XS&+T2) L&DC	IS;.TC) L1*J.&DC	F5_ L5>R'1<XR1*	T2)C'0'40420069
T+/@5;I.EDA'EDA	'EDA'E  7* E'2;I	'E)ST&(S'N6( I5*N	'EDA'EDA'EDA'EDA	'EDA'EDA'EDA'1+L	R2)M'ED440420070
T+/X714CR1*GD&<S	R5_U'@M~4@MCT5UC	S:+.T1)J'@A_'EDA	'&<LU6*XN14CW6*X	T1MCT5UC3*'L16<S	R5_E'78&40420071
T+/_2&+.Y6 E5DC	3K4A'Q<PN1DC01UC	R1* 06*J-E( I5*N	'5)ST&<GC8@XV1MC	A1> E6MA'8'XAE;.	F1)U'6SY40420072
T+/>_E(\$F&E'@~.	8&<.Y8@N'6*PC5_X	0K4A'EDA'EDA'EDA	'E(P08@N-EDCT2<X	S6<PR6)SR&< A5MC	B1M'ED440420073
T+/?Y0@GUBXPDE<.	Y6DA'9+.I5*)JMC	3*'L16<LAB8E'8XP	T6+SHE>.E6(XE0'S	R1+I'0)XE6(P084C	1@?-'N8M40420074
T+/0TE<.Y8@PS6<X	N6( E5*~T2D_'EDA	'EDA'EDA'EDA'EDA	'EDA'EDA'5(\$D1MC	E9'~E0= E1DC05M_	'ED'ED440420075
T+/;EDA'EDA'EDA	'EDA'EDA'EDA'EDC	R1*GD9_XI8@M	'E'8'9'EM	'AAE'AM'C	0@ '1-M4C420076
T<12K@ C1@ H'@ C	0@E'.....G@	'D'.....	'.....	'.....	'.....6T<40420077
E***E7*~DC*PHS	=*M&F '...'C	'FX'ASC'R'A	S0'Q'.....	'.....07090520750	613752SD40420078

LAST PAGE

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

0000 0A00          2 DECK 1
0000 0A00          3 EOF  START 0
0000 0A00          4 ORG  X'A00'
5 *****
6 * SECTION PREFACE *
7 *****
8 *
9 * THIS AREA CONTAINS INFORMATION NECESSARY FOR SECTION OPERATION. *
10 * THE PROGRAM IDENTIFICATION, FLAGS, FIRST ROUTINE ADDRESS AND *
11 * ERROR RECORDING TABLE ADDRESS ARE LOADED BY ASSEMBLED DATA. THE *
12 * CURRENT ROUTINE NUMBER IS SUPPLIED BY THE CONTROL PROGRAM. THE *
13 * UNIT DEFINITION TABLE, SPUT, IS NOT USED BY THIS SECTION. *
14 *
15 *****
0A00 EOF1      0A01 16 PROGID DC XL2'EOF1' PROGRAM IDENTIFICATION
0A02 00        0A02 17 SPFLGS DC XL1'0'   FLAGS
0A03 01        0A03 18 RNUM  DC XL1'1'   CURRENT ROUTINE NUMBER
0A04 0000      0A05 19      DC XL2'0'   NOT USED
0A06 0A99      0A07 20 FRTN  DC AL2(RTN01) ADDRESS OF FIRST ROUTINE PREFIX
0A08 0A0D      0A09 21 TABADR DC AL2(ERRTAB) ADDRESS OF ERROR RECORDING TABLE
0A0A E05000    0A0A 22 SPUT  EQU * UNIT TABLE
0A0C          0A0C 23      DC XL3'E05000'
24
25 *
26 ** ERROR RECORDING TABLE.
27 *
0A0D 80        0A0D 28 ERRTAB DC XL1'80'
0A0E 0C        0A0E 29      DC IL1'12'
0A0F F5F2F0F340D7D9C9 0A1A 30      DC CL12'5203 PRINTER'
0A17 05E3C5D9 0A1B 31      DC XL1'80'
0A18 80        0A1B 31      DC XL1'80'
0A1C 0F        0A1C 32      DC IL1'15'
0A1D 03C1E2E340F340C3 0A2B 33      DC CL15'LAST 3 COMMANDS'
0A25 06D4D4C1D5C4E2 0A2C 34      DC XL1'40'
0A2C 40        0A2C 34      DC XL1'40'
0A2D 02        0A2D 35      DC IL1'2'
0A2E 0000      0A2F 36 CMD1  DC XL2'0'
0A30 40        0A30 37      DC XL1'40'
0A31 02        0A31 38      DC IL1'2'
0A32 0000      0A33 39 CMD2  DC XL2'0'
0A34 40        0A34 40      DC XL1'40'
0A35 02        0A35 41      DC IL1'2'
0A36 0000      0A37 42 CMD3  DC XL2'0'
0A38 80        0A38 43      DC XL1'80'
0A39 0D        0A39 44      DC IL1'13'
0A3A 03C1E2E340F340C5 0A46 45      DC CL13'LAST 3 ERRORS'
0A42 09D9D6D9E2 0A47 46
0A47 80        0A47 47      DC XL1'80'
0A48 19        0A48 48      DC IL1'25'
0A49 40C3D6D4D4C1D5C4 0A61 49 ECMDS  DC CL25'COMMANDS XXXX XXXX XXXX'
0A51 E24040E7E7E7E740 0A62 50
0A59 E7E7E7E740E7E7E7 0A63 51      DC XL1'80'
0A61 E7        0A63 52      DC IL1'25'
0A62 80        0A62 51      DC XL1'80'
0A63 19        0A63 52      DC IL1'25'
0A64 40C3D240E2E3C1E3 0A7C 53 SNS011 DC CL25'CK STATUS XXXX XXXX XXXX'
0A6C E4E240E7E7E7E740 0A7C 53
0A74 E7E7E7E740E7E7E7 0A7C 53
0A7C E7        0A7C 53
0A7D 80        0A7D 55      DC XL1'80'
0A7E 19        0A7E 56      DC IL1'25'
0A7F 40D7D9C9D5E340D7 0A97 57 SNS110 DC CL25'PRINT POS XXX XXX XXX'
0A87 D6E24040E7E7E740 0A97 57
0A8F 40E7E7E74040E7E7 0A97 57
0A97 E7        0A97 57

```

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

0A98 FF        0A98 58      DC XL1'FF'
0A98 59

```

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
61 *****
62 * ROUTINE 01 - 5203 SYSTEM TEST MODULE *
63 *****
64 *
65 * COMMANDS ARE ISSUED TO THE 5203 IN RANDOM ORDER FROM A COMMAND *
66 * TABLE. SKIPS ARE TO THE NEXT LINE ONLY. *
67 *
68 *****
0A99 01 0A99 69 RTNO1 DC XL1'01' ROUTINE PREFIX
0A9A 00 0A9A 70 DC XL1'0'
0A9B FFFF 0A9C 71 DC XL2'FFFF'
0A9D 0A9D 72 USING BEGIN,1
0A9D 73 USING BEGIN,2
0A9D C2 02 0A9D 74 BEGIN LA BEGIN,XR2 LOAD BASE REGISTER
0AA1 3C 40 ODC7 75 MVI PFIELD+131,C' PUT BLANKS IN PRINT AREA
0AA5 3C 40 ODC6 76 MVI PFIELD+130,C'
0AA9 30 E3 ODC9 77 SNS PSTAT,X'E3' STORE PRINTER STATUS
0AAD 38 04 ODC9 78 TBN PSTAT,X'04'
0AB1 F2 90 0F 79 JF LD120 BRANCH IF NOT 48 CHARACTER CHAIN
0AB4 0C 2F ODC5 082F 80 MVC PFIELD+129(48),LPIMAG+47 SET UP FOR 48 CHARACTER CHAIN
0ABA 0C 51 0D95 ODC7 81 MVC PFIELD+81(82),PFIELD+131
0AC0 F2 87 0C 82 J SETPRF
0AC3 0C 77 ODC5 0877 83 LD120 MVC PFIELD+129(120),LPIMAG+119 SET UP FOR 120 CHARACTER CHAIN
0AC9 0C 09 0D4D ODC7 84 MVC PFIELD+9(10),PFIELD+131
0ACF 3C 00 0878 85 SETPRF MVI LPDATA-1,X'00' LOAD SYSTEM TEST FLAG INTO PRINT FLD
0AD3 31 E0 0CDA 86 LIO N112,X'E0' LOAD PRINTER LSRS
0AD7 31 E4 0CDC 87 LIO X800,X'E4'
0ADB 31 E6 0CDE 88 LIO X87C,X'E6'
0ADF C2 01 0D01 89 FIRSTC LA CMDTAB-2,XR1 INITIALIZE POINTER TO COMMAND TABLE
0AE3 34 01 0DCB 90 ST CNDPTR,XR1
0AE7 35 01 0DCB 91 LDPTR L CNDPTR,XR1 INCREMENT POINTER FOR NEXT COMMAND
0AEE D2 01 02 92 LA 2(,XR1),XR1
0AEE 7D 00 00 93 CLI 0(,XR1),X'0' RE-INITIALIZE IF THIS IS LAST
0AF1 E0 81 42 94 BE FIRSTC(,XR2) COMMAND
0AF4 34 01 0DCB 95 ST CNDPTR,XR1
0AF6 C1 E0 0B0C 96 TIO LPERR,X'E0' BRANCH IF ANY PRINTER ERRORS/NOT RDY
0AFC 30 E3 0DC9 97 SNS PSTAT,X'E3' STORE STATUS
0B00 39 E2 0DC9 98 TBF PSTAT,X'E2'
0B04 39 F7 0DC8 99 TBF PSTAT-1,X'F7'
0B08 C0 10 08B2 100 BT CKBUSY BRANCH IF NO ERROR STATUS
0B0C 30 E3 0DC9 101 LPERR SNS PSTAT,X'E3' STORE STATUS
0B10 39 E2 0DC9 102 TBF PSTAT,X'E2' IF NO CHECK CONDITIONS, GO EXIT
0B14 39 F7 0DC8 103 TBF PSTAT-1,X'F7'
0B18 C0 10 0CC8 104 BT GOOUT
0B1C 38 02 0DC9 105 TBN PSTAT,X'02' SKIP ERROR HALT IF UNPRINTABLE
0B20 38 80 0DD6 106 TBN FLAG,X'80' CHARACTER ERROR AND HAS ALREADY
0B24 C0 10 0CC8 107 BT GOOUT BEEN INDICATED
0B28 3A 80 0DD6 108 SBN FLAG,X'80'
0B2C 30 E6 0DD3 109 SNS PSTAT2,X'E6' STORE LPDAR
0B30 0C 03 0A57 0A5C 110 MVC ECMDS-10(4),ECMDS-5 PUT LAST COMMAND IN PUSHDOWN TABLE
0B36 0C 03 0A5C 0A61 111 MVC ECMDS-5(4),ECMDS OF ERROR COMMANDS
0B3C C0 87 021E 112 B UNPACK
0B40 02 0B40 113 DC IL1'2'
0B41 0A37 0B42 114 DC AL2(CMD3)
0B43 0A61 0B44 115 DC AL2(ECMDS)
0B45 0C 03 0A72 0A77 116 MVC SNS011-10(4),SNS011-5 PUT CHECK STATUS IN PUSHDOWN TABLE
0B48 0C 03 0A77 0A7C 117 MVC SNS011-5(4),SNS011
0B51 C0 87 021E 118 B UNPACK PUT STATUS IN ERROR TABLE
0B55 02 0B55 119 DC IL1'2'
0B56 0DC9 0B57 120 DC AL2(PSTAT)
0B58 0A7C 0B59 121 DC AL2(SNS011)
0B5A 0C 02 0A8D 0A92 122 MVC SNS110-10(3),SNS110-5 PUT PRINT POSITION IN TABLE
0B60 0C 02 0A92 0A97 123 MVC SNS110-5(3),SNS110
0B66 0F 00 0DD3 0CE1 124 SLC PSTAT2(1),X78
0B6C 04 20 0A97 0CD7 125 ZAZ SNS110(3),DZERO(1)
0B72 0F 20 0A97 0CD8 126 PPLOOP AZ SNS110(3),DONE(1)
0B78 06 00 0DD3 0CD4 127 SLC PSTAT2(1),ONE
0B7E C0 01 0B72 128 BNZ PPLOOP

```

ECF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
129 *
130 ** THE FOLLOWING CODING DETERMINES WHICH FAILURE HAS OCCURRED AND
131 ** SETS UP THE PROPER HALT CODE.
132 **
133 ** 04 - CHAIN SYNC CHECK.
134 ** 05 - INCREMENTER SYNC OR SLIP CHECK.
135 ** 06 - INCREMENTER FAILURE CHECK.
136 ** 09 - HAMMER ECHO CHECK.
137 ** 0A - ANY HAMMER ON CHECK.
138 ** 07 - THERMAL CHECK.
139 ** 01 - CARRIAGE SYNC CHECK.
140 ** 02 - CARRIAGE SPACE CHECK.
141 ** 03 - FORMS CHECK JAM.
142 ** 08 - NO OP STATUS BIT SET WITH NO OTHER ERROR.
143 ** 0C - UNPRINTABLE CHARACTER SKIPPED.
144 *
0882 C2 01 0CDF 145 LA SNSTAB-3,XR1 POINT AT TABLE OF SENSE /HALT INFO
0886 D2 01 03 146 SNSLP LA 3(,XR1),XR1 INCREMENT TO NEXT ENTRY
0889 1C 00 0894 00 147 MVC CHECK1+1(1),0(,XR1) MOVE MASK TO CHECK NEXT ERROR BIT
089E 1C 00 0898 01 148 MVC CHECK2+1(1),1(,XR1)
0893 39 00 0DC8 149 CHECK1 TBF PSTAT-1,X'0' CHECK TO SEE IF THIS IS ERROR BIT
0897 39 00 0DC9 150 CHECK2 TBF PSTAT,X'0' DETECTED
0898 C0 10 0886 151 BT SNSLP CONTINUE IF NOT
089F 1C 00 08A9 02 152 MVC PHALT(1),2(,XR1) FOUND IT - SET UP HALT
08A4 C0 87 0222 153 DOHALT B HALT ERROR HALT
08A8 E000 0BA9 154 PHALT DC XL2'E000'
08AA 3C 00 0878 155 MVI LPDATA-1,X'0'
08AE C0 87 0CC8 156 B GOOUT EXIT MODULE
08B2 C1 E6 0889 157 CKBUSY TIO ISBUSY,X'E6' BRANCH IF PRINTER BUSY
08B6 F2 87 14 158 J CXCARR GO ISSUE COMMAND IF NOT BUSY
08B9 0F 01 0DD5 0CD4 159 ISBUSY SLC TIMEOUT(2),ONE GO BACK TO SUPERVISOR IF NO TIMEOUT
08BF C0 01 0CC8 160 BNZ GOOUT
08C3 C0 87 0222 161 B HALT *BUSY TOO LONG
08C7 E014 0BC8 162 DC XL2'E014'
08C9 C0 87 0CC8 163 B GOOUT EXIT SUBROUTINE
08CD 38 80 0209 164 CKCARR TBN SBYTE1,SSW08 SET UP TO CHECK LEFT OR RIGHT CARR.
08D1 F2 90 07 165 JF SLEFT LINE COUNTER DEPENDING ON SSW08
08D4 30 E0 0DCD 166 SNS LCIS,X'E0' -RIGHT CARRIAGE
08D8 F2 87 04 167 J CKDCP
08DB 30 E0 0DCE 168 SLEFT SNS LCIS+1,X'E0' -LEFT CARRIAGE
08DF 3D FF 0878 169 CKDCP CLI LPDATA-1,X'FF' BRANCH IF DCP DID NOT PRINT
08E3 F2 81 0A 170 JE CKLINE
08E6 0C 00 0DCF 0DCD 171 MVC LCSB(1),LCIS NO OP LINE COUNTER CHECK
08EC 3C FF 0878 172 MVI LPDATA-1,X'FF'
08FO 0D 00 0DCD 0DCF 173 CKLINE CLC LCIS(1),LCSB CHECK LINE COUNTER
08F6 F2 81 50 174 JE LDCND
08F9 04 20 0D35 0CD7 175 ZAZ LCERR-13(3),DZERO(1)
08FF 04 20 0D41 0CD7 176 ZAZ LCERR-1(3),DZERO(1)
0C05 0C 00 0DD1 0DCD 177 MVC WORK(1),LCIS SET UP ACTUAL LINE COUNTER
0C08 06 20 0D35 0CD8 178 ISLOOP AZ LCERR-13(3),DONE(1)
0C11 0F 00 0DD1 0CD4 179 SLC WORK(1),ONE
0C17 C0 01 0C08 180 BNZ ISLOOP
0C18 0C 00 0DD1 0DCF 181 MVC WORK(1),LCSB SET UP EXPECTED LINE COUNTER
0C21 06 20 0D41 0CD8 182 SBLOOP AZ LCERR-1(3),DONE(1)
0C27 0F 00 0DD1 0CD4 183 SLC WORK(1),ONE
0C2D C0 01 0C21 184 BNZ SBLOOP
0C31 C0 87 021A 185 B PRINT PRINT LINE COUNTER ERROR
0C35 C5 0C35 186 DC XL1'C5' MESSAGE
0C36 27 0C36 187 DC IL1'39'
0C37 0D42 0C38 188 DC AL2(LCERR)
0C39 E033 0C3A 189 DC XL2'E033'
0C3B C0 87 0222 190 B HALT HALT ON ERROR
0C3F E033 0C40 191 DC XL2'E033'
0C41 3C 00 0878 192 MVI LPDATA-1,X'0' SET UP TO SKIP NEXT LINE CTR CHECK
0C45 C0 87 0882 193 B CKBUSY
0C49 35 01 0DCB 194 LDCND L CNDPTR,XR1 LOAD POINTER FOR THIS COMMAND
0C4D 1C 01 0CC1 01 195 MVC STRYID+2(2),1(,XR1) MOVE INTO COMMAND
0C52 78 02 00 196 TBN 0(,XR1),X'02' BRANCH IF NO PRINT

```

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
OC55 F2 90 12 197 JF CKSKIP
OC58 0C 00 0D43 ODC7 198 MVC PFIELD-1(1),PFIELD+131 RIPPLE PRINT FIELD
OC5E 0C 83 0DC7 ODC6 199 MVC PFIELD+131(132),PFIELD+130
OC64 0C 83 08FF ODC7 200 MVC LPDATA+131(132),PFIELD+131 MOVE TO PRINTOUT AREA
OC6A 7D FF 01 201 CKSKIP CLI 1(XR1),X'FF' BRANCH IF NOT SKIP TO NEXT LINE
OC6D F2 01 1B 202 JNE SETLC
OC70 0E 00 0DCF ODC4 203 ALC LCSB(1),ONE
OC76 0C 00 0CC1 ODC6 204 MVC STRTIO+2(1),LCSB SET UP TO SKIP TO NEXT LINE
OC7C 3D 70 0CC1 205 CLI STRTIO+2,112 IS WE OVERFLOW LENGTH, SET UP
OC80 F2 04 1B 206 JNH LDETAB TO GO TO LINE 1
OC83 3C 01 0CC1 207 MVI STRTIO+2,1
OC87 3C 00 0DCF 208 MVI LCSB,0
OC88 0E 00 0DCF OCC1 209 SETLC ALC LCSB(1),STRTIO+2 SET UP EXPECTED LINE COUNTER TO WHAT
OC91 3D 70 0DCF 210 CK112 CLI LCSB,112 IT SHOULD BE AFTER THIS COMMAND
OC95 F2 04 06 211 JNH LDETAB
OC98 0F 00 0DCF OC92 212 SLC LCSB(1),CK112+1 TAKE CARE OF CROSSING LINE 112
OC9E 38 80 0209 213 LDETAB TBN SBYTE1,SSW08 PRINT USING RIGHT CARRIAGE IF SSW08
OCA2 F2 90 04 214 JF \*\*7 IS ON
OCA5 3A 08 0CC0 215 SBN STRTIO+1,X'08'
OCA9 38 80 0DD6 216 SBF FLAG,X'80' TURN OFF UPC FLAG
OCAD 0C 01 0A2F OA33 217 MVC CMD1(2),CMD2 PUT THIS COMMAND IN PUSH-DOWN TABLE
OCB3 0C J1 OA33 OA37 218 MVC CMD2(2),CMD3
OCB9 0C 01 0A37 OCC1 219 MVC CMD3(2),STRTIO+2
OCBF F3 00 00 220 STRTIO SIO DO COMMAND
OCC2 0C 01 0DD5 OCEO 221 MVC TIMEOUT(2),TIME SET UP BUSY TIMEOUT
OCC8 3D E0 OA00 222 GOOUT CLI X'A00',X'E0' CHECK TO SEE IF SECTION RELOCATED
OCCC 0C 01 0A0A 223 BNE ENTRY YES, GO TO SYSTEM TEST SUPERVISOR
OCDD E0 87 4A 224 B LDPTR(XR2) NO, REMAIN IN TEST
225
226 \*\*\*\*\*
227 \* CONSTANTS \*\*\*\*\*
228 \*\*\*\*\*
OCD3 0001 OCD4 229 ONE DC IL2'1'
OCD5 0002 OCD6 230 TWO DC IL2'2'
OCD7 F0 OCD7 231 DZERO DC DL1'0'
OCD8 F1 OCD8 232 DONE DC DL1'1'
OCD9 7070 OCDA 233 N112 DC XL2'7070'
OCDB 0800 OCDC 234 X800 DC XL2'800'
OCDD 087C OCDE 235 X87C DC XL2'87C'
OCDF 1770 OCEO 236 TIME DC IL2'6000'
OCE1 78 OCE1 237 X78 DC XL1'78'
OCE2 0080040040051000 OCE2 238 SNSTAB EQU \* TABLE OF ERROR STATUS/HALTS
OCEA 0604000902000A00 OCF6 239 DC XL2'00800400400510000604000902000A002007800001'
OCF2 2007800001 239
OCF7 4000022000030100 OD02 240 DC XL12'40000220000301000800020C'
OCFF 0800020C 240
241 \*
242 \*\* TABLE OF COMMANDS.
243 \*
OD03 244 CMDTAB EQU \*
OD04 245 DC XL2'E201' PRINT & SPACE 1
OD05 E202 OD06 246 DC XL2'E202' PRINT & SPACE 2
OD07 E201 OD08 247 DC XL2'E201'
OD09 E203 OD0A 248 DC XL2'E203' PRINT & SPACE 3
OD0B E201 OD0C 249 DC XL2'E201'
OD0D E000 OD0E 250 DC XL2'E000' SPACE 0
OD0F E201 OD10 251 DC XL2'E201'
OD11 E001 OD12 252 DC XL2'EC01' SPACE 1
OD13 E201 OD14 253 DC XL2'E201'
OD15 E6FF OD16 254 DC XL2'E6FF' PRINT & SKIP TO LINE XX
OD17 E201 OD18 255 DC XL2'E201'
OD19 E4FF OD1A 256 DC XL2'E4FF' SKIP TO LINE XX
OD1B 00 OD1B 257 DC XL1'0'
258
259 \*\*\*\*\*
260 \* PRINTOUTS \*\*\*\*\*
261 \*\*\*\*\*

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
OD1C D3C9D5C540C3D6E4 OD42 262 LCERR DC CL39'LINE COUNTER ERROR. IS XXX. SHD BE XXX.'
OD24 D5E3C5D940C5D9D9 262
OD2C D6D94B40C9E240E7 262
OD34 E7E74B40E2C8C440 262
OD3C C2C540E7E7E74B 262
263
264 \*\*\*\*\*
265 \* RESERVED STORAGE \*\*\*\*\*
266 \*\*\*\*\*
OD43 0D43 267 DS CL1 DUMMY BYTE FOR RIPPLE
0D44 268 PFIELD EQU \* PRINTER WORK FIELD
ODC7 269 DS CL132
ODC8 270 PSTAT DS CL2 PRINTER STATUS
ODCA 271 CMDPTR DS CL2 COMMAND TABLE POINTER
ODCC 272 LCIS DS CL2 ACTUAL LINE COUNTER
ODCE 273 DS CL1
ODCF 274 LCSB DS CL1 EXPECTED LINE COUNTER
ODDO 275 WORK DS CL2
ODD2 276 PSTAT2 DS CL2
ODD4 277 TIMEOUT DS CL2
ODD6 278 FLAG DS CL1
279
280 \*\*\*\*\*
281 \* EQUATES \*\*\*\*\*
282 \*\*\*\*\*
0010 283 IAR EQU X'10' INSTRUCTION ADDRESS REGISTER
0008 284 ARR EQU X'08' ADDRESS RECALL REGISTER
0001 285 XR1 EQU X'01' INDEX REGISTER 1
0002 286 XR2 EQU X'02' INDEX REGISTER 2
287
0208 288 SBYTE0 EQU X'208' FIRST BYTE OF COMMON SENSE SWITCHES
0209 289 SBYTE1 EQU X'209' SECOND BYTE OF COMMON SENSE SWITCHES
020A 290 SBYTE2 EQU X'20A' FIRST BYTE OF SECTION SSWS
020B 291 SBYTE4 EQU X'20B' SECOND BYTE OF SECTION SSWS
0212 292 TEST EQU X'212' SRT - ENTRY TO CHECK CONSOLE SMS
0216 293 LINK EQU X'216' - ENTRY TO CHAIN ROUTINE
021A 294 PRINT EQU X'21A' - ENTRY TO PRINT
021E 295 UNPACK EQU X'21E' - ENTRY TO CONVERT HEX TO EBCDIC
0222 296 HALT EQU X'222' - ENTRY TO HALT
0226 297 PACK EQU X'226' - ENTRY TO PACK EBCDIC TO HEX
0232 298 UTAB EQU X'232' - DCP UNIT TABLE
0800 299 LPI MAG EQU X'800' FIRST BYTE OF 5203 PRINT IMAGE FIELD
087C 300 LPDATA EQU X'87C' FIRST BYTE OF 5203 PRINT DATA FIELD
301
302 \*
303 \*\* SENSE SWITCHES.
304 \*
0004 305 SSW05 EQU X'04' PRINT ON MFCU
0080 306 SSW08 EQU X'80' USE 5203 RIGHT CARRIAGE
307
0A0A 308 ENTRY EQU X'ACA' MULTIPROGRAMMING ENTRY
0A9D 309 END BEGIN

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ARR	C	001	0008	0284	
BEGIN	A	004	0A9D	0074	0072 0073 0074 0309
CHECK1	A	004	0B93	0149	0147*
CHECK2	A	004	0B97	0150	0148*
CKBUSY	A	004	0BB2	0157	0100 0193
CKCARR	A	004	0BCD	0164	0158
CKDCP	A	004	0BDF	0169	0167
CKLINE	A	006	0BF0	0173	0170
CKSKIP	A	003	0C6A	0201	0197
CK112	A	004	0C91	0210	0212
CMDPTR	A	002	0DCB	0271	0090* 0091 0095* 0194
CMDTAB	A	001	0D03	0244	0089
CMD1	A	002	0A2F	0036	0217*
CMD2	A	002	0A33	0039	0217 0218*
CMD3	A	002	0A37	0042	0114 0218 0219*
DOHALT	A	004	0BA4	0153	
DONE	A	001	0CD8	0232	0126 0178 0182
DZERO	A	001	0CD7	0231	0125 0175 0176
ECMDS	A	025	0A61	0049	0110 0110* 0111 0111* 0115
ENTRY	C	001	0A0A	0308	0223
ERRTAB	A	001	0A0D	0028	0021
EOF	A	001	0000	0003	
FIRSTC	A	004	0ADF	0089	0094
FLAG	A	001	0DD6	0278	0106 0108* 0216*
FRTN	A	002	0A07	0020	
GOODJT	A	004	0CC8	0222	0104 0107 0156 0160 0163
HALT	C	001	0222	0296	0153 0161 0190
IAR	C	001	0C10	0283	
ISBUSY	A	006	0BB9	0159	0157
ISLOOP	A	006	0C0B	0178	0180
LCERR	A	039	0D42	0262	0175* 0176* 0178* 0182* 0188
LCIS	A	002	0DCD	0272	0166* 0168* 0171 0173 0177
LCSB	A	001	0DCF	0274	0171* 0173 0181 0203* 0204 0208* 0209* 0210 0212*
LDCMD	A	004	0C49	0194	0174
LDETAB	A	004	0C9E	0213	0206 0211
LDPTR	A	004	0AET	0091	0224
LD120	A	006	0AC3	0083	0079
LINK	C	001	0216	0293	
LPDATA	C	001	087C	0300	0085* 0155* 0169 0172* 0192* 0200*
LPERR	A	004	0B0C	0101	0096
LPIMAG	C	001	0800	0299	0080 0083
N112	A	002	0CDA	0233	0086
ONE	A	002	0CD4	0229	0127 0159 0179 0183 0203
PACK	C	001	0226	0297	
PFIELD	A	001	0D44	0268	0075* 0076* 0080* 0081 0081* 0083* 0084 0084* 0198 0198* 0199 0199*
PHALT	A	002	0BA9	0154	0200
PPLOOP	A	006	0B72	0126	0152*
PRINT	C	001	021A	0294	0128
PROGID	A	002	0A01	0016	0185
PSTAT	A	002	0DC9	0270	0077* 0078 0097* 0098 0099 0101* 0102 0103 0105 0120 0149 0150
PSTAT2	A	002	0DD3	0276	0109* 0124* 0127*
RNUM	A	001	0A03	0018	
RTN01	A	001	0A99	0069	0020
SBLOOP	A	006	0C21	0182	0184
SBYTE0	C	001	0208	0288	
SBYTE1	C	001	0209	0289	0164 0213
SBYTE2	C	001	020A	0290	
SBYTE4	C	001	020B	0291	
SETLC	A	006	0C8B	0209	0202
SETPRF	A	004	0ACF	0085	0082
SLEFT	A	004	0BD3	0168	0165
SNSLP	A	003	0B86	0146	0151
SNSTAB	A	001	0CE2	0238	0145
SNS011	A	025	0A7C	0053	0116 0116* 0117 0117* 0121
SNS110	A	025	0A97	0057	0122 0122* 0123 0123* 0125* 0126*

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SPFLGS	A	001	0A02	0017	
SPUDT	A	001	0A0A	0022	
SSW05	C	001	0004	0305	
SSW08	C	001	0080	0306	0164 0213
STRTIO	A	003	0CBF	0220	0195* 0204* 0205 0207* 0209 0215* 0219
TABADR	A	002	0A09	0021	
TEST	C	001	0212	0292	
TIME	A	002	0CE0	0236	0221
TIMOUT	A	002	0DD5	0277	0159* 0221*
TWD	A	002	0CD6	0230	
UNPACK	C	001	021E	0295	0112 0118
UTAB	C	001	0232	0298	
WORK	A	002	0DD1	0275	0177* 0179* 0181* 0183*
XR1	C	001	0001	0285	0089* 0090 0091* 0092 0092* 0093 0095 0145* 0146 0146* 0147 0148
XR2	C	001	0002	0286	0152 0194* 0195 0196 0201
X7B	A	001	0CE1	0237	0074* 0094 0224
X800	A	002	0CDC	0234	0124
X87C	A	002	0CDE	0235	0087

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

EOF1 EOF - 5203 PRINTER SYSTEM TEST MODULE

OBJECT CARD LISTING

THE CHARACTER \* INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

SB@P01UA & ..... 7 P .....  
..... PYNEOF10001

T+ Y88|D & BZU HC:AS M < .0@4C P6\*XN8@PR- \*LO; T&|{ 0\*#M5<GN1+I .. \* .. & H D B B .. UG\*HGEOF10002

T+Z3C||A8>| @4C E6)X06;H FMCC5\_L M0)PD8UA 9=-X94C X9=-X&+-X9=-; FHC C4UCS0@GT9+I 9=- X94 70<E0F10003

T(-DD9=-X94CX9=- X-AV 5\*X15;{ 5\*\$ S&DCX9=) &+-X94A 9=-X@OD \*\*\*\*\* -D |}D {131 C\*Q080 (C X50@E0F10004

T< ,&C\*U8A 7I@Z |CB@{1&-?CED(V&7 G@Y\*CG\*(1&/7C U (L&7G) H;3G-C(Y 19 3\*<& ?H2</F1& KC MA;KME0F10005

T< &<9-3;0-D( L& AC\*#5 67.4-DB-6 8HEB( D{2@G-800 0807I+;H{2LX7C\*T D >2< ?H2\*761& +B-QB}L E0F10006

T. X9807I+;H{2LX 7C\*T D 3H+ H{2LS C)\* D 3H+Y (5TC WC)<< OZPBVO< OZ \* . . . . .B-WH/8EE/H +B-QB2JYEOF10007

T.&\_XBWG /OH; -Y 7BWD< OZ2BX\*< OZ 7BX3 /OH; -7IBX0 < -D{BZH< -DKBZ\* | . . . ,HKMTG140EA +B-AK. E0F10008

T. >MC)<<8&&-BZ\* <50Q-BZ\*<6 @ C)< <5< AB7.B &3-4-D CG .V \* \* >Q LU . . . . .HK&|FJMLC04 IAO<ADQ\*E0F10009

T<&?FC\*-9 710A . //O B;UB0H\*BH) | . . . H;@BGC<TA9-> 9@Y\*MCOD(5&3MO D <2<BG SH .KUXHAD {B&MA&14E0F10010

T<07;8AL /O3H+M BB-H&A3C-C\*72/O& 08 7+| -@H; \*HAB-0 C\*@{3L3\*BGZ{ 7 (C\*2-N DH ) >.B& SE1 EMS4E0F10011

TH00WCLM<50&-CMD <500 C)D{3&Q-CLM <6 @ C)D<5< AC \* < 7JC\*@FH 5AC(- H2UVH1@SFJMLC04 IAO<A3BDE0F10012

T<-1RCO (4&3MO D <H\*BG /,EI05B8C| /OHS8C<@ /#OH\* .XTMAC\*Z\* &3A P- B {H&D-0 . . . . ZIKD JB&MCNZ&E0F10013

T.-2HCM<{102CC\*\* (1-2CB|@{177" -H AF0B C\*@<5 O C<D {3350C<G2AAZ@ &3 A| . . . . BOVHJ@SF&@ IAO<A\*C@E0F10014

T.&26C\*@+ 7{C<D \* 7|@-&FC0 (302 K+H BB-H&ACYHC< #- 7CC DH.OY3C D H<0 B4ZI2<-EAM .AOMA-HYEOF10015

T{&3&BT\*< &Y7C<G 3 \* \* < &7NC+ \*8 Y O DHB>BGK- A . . . 0@PA0B H-A)0;0B A A AJ A-E A +AOMA&+QE0F10016

T+4XB&H B -AB H \* \* S \* \* OD E . . . . NC+HAB-.S ;HCB-G - +HAB GS ;\$\*8-G U\*OCL2)PE&<|O9(P T|)U (IHE0F10017

TF-5B&<PR6)SRK4C 18UCX9=).&+.H1DC B1MCX9=). . . . . 72DE0F10018

EBZ5\*E7\*=-DC\*PH& =\*7NEF| . . . | C . . . F& ASC R A SO Q . . . . . 1011690 1267008QE0F10019

----- LAST PAGE -----

DATE 28JUL69 28NOV69 20JAN70  
EC NO. 816444 816542 816548





E013 5203 LINE PRINTER FUNCTION TESTS

E013 5203 LINE PRINTER FUNCTION TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

2 DECK 4  
3 E013 START X'A00'  
4 \*\*\*\*\*  
5 \* SECTION PREFACE \*  
6 \*\*\*\*\*  
7 \* THIS AREA CONTAINS INFORMATION NECESSARY FOR SECTION OPERATION. \*  
8 \* THE PROGRAM IDENTIFICATION, FLAGS AND FIRST ROUTINE ADDRESS \*  
9 \* ARE LOADED BY ASSEMBLED DATA. THE CURRENT ROUTINE NUMBER IS \*  
10 \* SUPPLIED BY THE CONTROL PROGRAM. SECTION UDT ENTRIES ARE \*  
11 \* DEFINED PARTIALLY BY THE SECTION SO THAT THE CONTROL PROGRAM \*  
12 \* CAN SUPPLY OPTION BYTES. \*  
13 \*\*\*\*\*  
14 DC XL2'E013' PROGRAM IDENTIFICATION  
15 DC XL1'0' FLAGS  
16 RNUM DC XL1'1' CURRENT ROUTINE NUMBER  
17 DC XL2'0' RESERVED  
18 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX  
19 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE  
20 SPUDT DC XL3'E05000' UNIT DEFINITION TABLE - PRINTER  
21 \*\*\*\*\*  
22 \*  
23 \* ROUTINE 1 - SENSE COMMAND TO PRINTER \*  
24 \* (RESTORE CARRIAGE(S) BEFORE EXECUTING) \*  
25 \*  
26 \*\*\*\*\*  
27 EXP12 DC XL2'0101'  
28  
29 RTN1 DC XL1'1' ROUTINE NUMBER  
30 DC XL1'0' FLAGS  
31 DC AL2(RTN2) ADDRESS OF NEXT ROUTINE PREFIX  
32 \*\*\*\*\*  
33 TBN SPUDT,B'1' DUAL FEED  
34 JT NIGEB  
35 MVI EXP12,X'00'  
36 NIGEB SNS STAIX,X'E0' SENSE FOR CARR.LOC.  
37 CLC STAIX(2),EXP12 ARE LINE COUNTERS AT LINE 1  
38 JE SPALT JUMP OVER HALT  
39 TBN SBYTE0,SSW05 PRINT ON MFCU  
40 JF GRALT  
41 B PRINT PRINT 'CMD DECODE ERROR'  
42 DC XL1'C1'  
43 DC IL1'16'  
44 DC AL2(REDOP)  
45 DC XL2'E030'  
46 MVC MAP(2),CHT13 PUT CHART NO. IN MSG.  
47 B PRINT PRINT PROCESSOR CHK.MSG.  
48 DC XL1'B1'  
49 DC IL1'10'  
50 DC AL2(MAP)  
51 GRALT B INVALID 'N' FIELD IN SENSE COMD.  
52 DC XL2'E030'  
53 SPALT TIO JEXT,PBBUSY  
54 JEXT CLI UCSFLG,X'FF' 120 CHAR.IMAG  
55 JNE SESTAT  
56 MVI 'ECMB1,X'39'  
57 SESTAT SNS STAT6,X'E3' SET TEST FOR BIT OFF  
58 TECHBI T8N STAT6,B'100' SENSE STATUS BYTES  
59 JT CKYDOK TEST 48 CHAR.BIT ON OR OFF  
60 TBN SBYTE0,SSW05 PRINT ON MFCU  
61 JF HALT  
62 B PRINT PRINT CHAIN CHK.ERR  
63 DC XL1'C1'  
64 DC IL1'37'  
65 DC AL2(CHACHE)  
66 DC XL2'E00E'  
67 MVC MAP(2),CHT19 PUT CHART NO. IN MSG.  
68 B PRINT PRINT PRINTER MAP CHART NO.  
69 DC XL1'B1'

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

0A86 0A 0A86 70 DC IL1'10'  
0A87 1BD1 0A88 71 DC AL2(MAP)  
0A89 C0 87 0222 72 HALT B HALT  
0A8D E00E 0A8E 73 DC XL2'E00E'  
0A8F C0 87 0216 74 OKYDOK B LINK  
75  
76 \*\*\*\*\*  
77 \*  
78 \* ROUTINE 2 - TIO TO NOT READY DEVICE \*  
79 \* (PRINTER MUST BE NOT READY BEFORE EXECUTING) \*  
80 \*  
81 \*\*\*\*\*  
82 RTN2 DC XL1'2' ROUTINE NUMBER  
83 DC XL1'80' FLAGS - MANUAL INTERVENTION  
84 DC AL2(RTN3) ADDRESS OF NEXT ROUTINE PREFIX  
85 \*\*\*\*\*  
86 TIO RINRDY,NRDY SHOULD BRANCH ON TEST OF NOT READY  
87 TBN SBYTE0,SSW05 PRINT ON MFCU  
88 JF LOARR JUMP TO SKIP PRINTING  
89 MVC RORN(3),TON PUT NOT IN MSG.  
90 B PRINT PRINT MAKE NOT READY  
91 DC XL1'41'  
92 DC IL1'19'  
93 DC AL2(MANORE)  
94 DC XL2'E0E0'  
95 LOARR HPL X'6F',X'7C' NOT READY HALT  
96 TIO RINRDY,NRDY IF PRINTER OK, SHOULD BRANCH  
97 TBN SBYTE0,SSW05 PRINT ON MFCU  
98 JF TALT  
99 B PRINT PRINT NOT READY ERROR  
100 DC XL1'C1'  
101 DC IL1'26'  
102 DC AL2(CCRINS)  
103 DC XL2'E031'  
104 MVC MAP(2),CHT10 PUT CHART NO. IN MSG.  
105 B PRINT PRINT PRINTER MAP CHART NO.  
106 DC XL1'B1'  
107 DC IL1'10'  
108 DC AL2(MAP)  
109 TALT B HALT \*ERROR - TIO FAILED TO BRANCH  
110 DC XL2'E031'  
111 RINRDY B LINK GO TO DCP TO LINK TO NEXT ROUTINE  
112  
113 \*\*\*\*\*  
114 \*  
115 \* ROUTINE 3 - TIO ON BUSY TO NOT READY DEVICE \*  
116 \*  
117 \*\*\*\*\*  
118 RTN3 DC XL1'3' ROUTINE NUMBER  
119 DC XL1'0' FLAGS  
120 DC AL2(RTN4) ADDRESS OF NEXT ROUTINE PREFIX  
121 \*\*\*\*\*  
122 TIO PRFCU,BUSY BRANCH SHOULD NOT OCCUR  
123 J R2EXIT  
124 PRFCU TBN SBYTE0,SSW05 PRINT ON MFCU  
125 JF R2BUSY  
126 B PRINT PRINT BUSY ERR  
127 DC XL1'C1'  
128 DC IL1'22'  
129 DC AL2(BABUSY)  
130 DC XL2'E032'  
131 MVC MAP(2),CHT17 PUT CHART NO. IN MSG.  
132 B PRINT PRINT PRINTER MAP CHART NO.  
133 DC XL1'B1'  
134 DC IL1'10'  
135 DC AL2(MAP)  
136 R2BUSY B HALT \*ERROR - TEST I/O ON BUSY FAILED  
137 DC XL2'E032'

E013 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LDC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for routines 4, 5, and 6, including instructions like R2EXIT, RTN4, TYBS, R4CHK, etc.

E013 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LDC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for routines 6 and 7, including instructions like TIO, J, UFERR, BUSLE, etc.











EO13 5203 LINE PRINTER FUNCTION TESTS

EO13 5203 LINE PRINTER FUNCTION TESTS

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

954 *****
955 *
956 * THIS ROUTINE ISSUES AND CHECKS AN EXECUTE I/O COMMAND AS
957 * SELECTED BY THE MAINLINE PROGRAM. LINKAGE TO THIS SUBROUTINE
958 * IS AS FOLLOWS-
959 *
960 * B XIO
961 * DC 2,X'0 CODE & CONTROL CODE OF COMMAND*
962 *
963 *****
1432 CC 01 14C2 1858 964 XIO MVC FRMLE+3(2),ADFOLG PUT IN 112 FORM LENGTH ADDR.
1438 36 08 1823 965 SKIXIO A ONE,ARR
143C 34 08 1455 966 ST LDCMD+5,ARR LOAD PARAMETER POINTER
1440 36 08 1823 967 A ONE,ARR
1444 34 08 164F 968 ST EXIT+3,ARR SET UP EXIT
1448 34 01 1651 969 ST SAVMUN,XR1 SAVE REG. 1
144C 34 02 1653 970 ST SAVTUU,XR2 SAVE REG.2
1450 0C 01 150F 0000 971 LDCMD MVC CMND+2(2),*-* SET UP COMMAND FROM PARAMETER
1456 0C 01 1F9D 150F 972 MVC MSECS(2),CMND+2 IF ENTRY IS -OXXX-, GO DELAY
145C 39 0F 150E 973 TBF CMND+1,X'FC'
1460 F2 10 19 974 JT WT
1463 38 40 020A 975 TBN SBYTE2,SSW11 BRANCH IF SSW11 OFF
1467 F2 90 03 976 JF CSSWOA
146A F0 7C 18 977 HPL X'1B',X'7C' HALT ON E4
146D 38 20 020A 978 CSSWOA TBN SBYTE2,SSW12 DELAY BETWEEN CMDS.
1471 F2 90 26 979 JF TIOCHK
1474 30 00 1F9D 980 SNS MSECS,X'0' READ DATA SWITCHES FOR DELAY
1478 38 0F 1F9C 981 SBF MSECS-1,X'FO' TURN OFF HIGH ORDER 4 BITS OF DELAY
147C 0C FF 0800 C800 982 WT CLC LPI(256),LPI 1 MILLISECOND DELAY
1482 0C 38 0800 0800 983 CLC LPI(6C),LPI
1488 0F 01 1F9D 1823 984 SLC MSECS,ONE(2) DO FOR DESIRED NUM OF MILLISECS
148E 0C 84 147C 985 BH WT
1492 39 0F 150E 986 TBF CMND+1,X'FO' DO NOT EXECUTE COMMAND IF DELAY
1496 0C 10 1644 987 BT XIOEXT
149A C1 E0 14A1 988 TIOCHK TIO ERNRDY,NRDY BRANCH IF NOT READY
149E F2 87 12 989 J SIOOK
14A1 C0 87 1656 990 ERNRDY B STERR BR TO CHECK STATUS
14A5 C0 87 1732 991 B PSTERR GO PRINT STATUS OR 1ST LINES
14A9 C0 87 0222 992 B HALT *PRINTER NOT READY
14AD E010 14AE 993 DC XL2*EC1C' NOT READY ID.
14AF C0 87 149A 994 B TIOCHK
14B3 C0 87 140A 995 SIOOK B BRGUT
14B7 31 E4 1846 996 LIO LPIADR,LPIAR LOAD LSR ADDRESS REGISTER
14BB 31 E6 1846 997 LIG LPDADR,LPDAR
14BF 31 E0 0000 998 FRMLE LIO *-*,LOFLG LOAD FORMS LENGTH
14C3 38 80 0209 999 TBN SBYTE1,SSW08 PRINT ON RIGHT CARR.
14C7 F2 90 04 1000 JF NCTRIT JUMP IF NOT
14CA 3A 08 150E 1001 SBN CMND+1,B'1000' SET MOD.BIT
14CE 0C 01 1F91 150F 1002 NOTRIT MVC ERT1(2),CMND+2
14D4 38 08 150E 1003 TBN CMND+1,B'1000' THIS CMD.FOR RIGHT CARR.
14D8 F2 90 11 1004 JF SKRICA SKIP TO SET LEFT CARR.
14DB 3C EC 1581 1005 MVI CABY+1,RICABY SET TO CHECK RIGHT CARR.BUSY
14DF 3C E8 1FAA 1006 MVI SPACE0-1,X'E8' SET RIGHT CARR.SPACE 0
14E3 0C 01 1528 1860 1007 MVC LICDSA+5(2),STOAD PUT RIGHT CARR.CTR.IN COMPARE
14E9 F2 87 21 1008 J CMND
14EC 3C E4 15B1 1009 SKRICA MVI CABY+1,CABUSY SET TO CHECK LEFT CARR.BUSY
14F0 3C E0 1FAA 1010 MVI SPACE0-1,X'E0' SET LEFT CARR.SPACE 0
14F4 0C 01 1528 1862 1011 MVC LICDSA+5(2),STOM1 PUT LEFT CARR.CTR.IN COMPARE
14FA 3D 09 0A03 1012 CLI RNUM,X'C9' IS THIS NET PRINT ROUTINE
14FE F2 01 0C 1013 JNE CMND
1501 30 E2 1F8F 1014 WAHOL SNS STAT2,X'E2' GRAB TIMINGS
1505 38 01 1F8E 1015 TBN STAT2-1,B'1' WAIT FOR HOME LATCH
1509 C0 90 1501 1016 BF WAHCL
150D F3 00 00 1017 CMND SIO X'0',X'C' COMMAND LOADED DURING EXECUTION
1510 0C 01 18D1 18DD 1018 MVC MAP(2),CHT17 PUT CHART NO. IN MSG.
1516 0D 01 150F 1FAB 1C19 CLC CMND+2(2),SPACED DO NOT CHECK FOR BUSY IF THIS WAS
151C F2 81 54 1020 JE ISBUSY SPACE WITH ZERO CONTROL CODE
151F 3C E0 1F8D 1021 SNS STAT0,X'E0' GRAB THE LINE CTRS.

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1523 0D 00 150F 0000 1022 LICDSA CLC CMND+2(1),*-* LINE CTR.SAME AS CMD.C.C.
1529 F2 81 47 1023 JE ISBUSY
152C C1 E6 1573 1024 TIO ISBUSY,BUSY PRINTER SHOULD BE BUSY
1530 3A 01 1F8B 1025 SBN TAGS,TAG7 SET 1ST LINE PRINT ONLY
1534 0C 00 1780 1553 1026 MVC HLTID(1),NOBALT PUT HALT ID IN MSG
153A C0 87 172E 1027 B ASTERR GO PRINT STATUS
153E C0 87 021A 1028 B PRINT PRINT NOT BUSY MSG
1542 81 1542 1029 DC XL1'81'
1543 1D 1543 1030 DC IL1'29'
1544 1837 1545 1031 DC AL2(NOBUSY)
1546 C0 87 021A 1032 B PRINT PRINT PRINTER MAP CHART NO.
154A 85 154A 1033 DC XL1'85'
154B CA 154B 1034 DC IL1'10'
154C 1BD1 154D 1035 DC AL2(MAP)
154E C0 87 0222 1036 B HALT
1552 E016 1553 1037 NOBALT DC XL2'E016' *IF NOT, HALT ON ERROR
1554 38 10 020A 1038 TBN SBYTE2,SSW13 NOT BUSY HALT
1558 F2 90 18 1039 JF ISBUSY SSW- 13 ON (NO ALT.PRTR.) ?
1561 C0 87 0222 1040 MVC CMODE(1),ERT1-1 SET CMD.CODE IN HALT
1565 E000 1041 B HALT DISPLAY CMD.CODE
1567 0C 00 1572 1F91 1566 1042 CMODE DC XL2'E000'
156D C0 87 0222 1043 MVC CNCO(1),ERT1 SET CONTROL CODE IN HALT
1571 E000 1044 B HALT DISPLAY CONTROL CODE
1573 0C 02 1FA5 1838 1572 1045 CNCO DC XL2'E000'
1579 0C 01 15D4 185A 1046 ISBUSY MVC BUSUB(3),BUSCT
157F 3C 12 1600 1047 MVC DELAY+3(2),ADBJBY PUT IN LOOP ADDR.
1583 0C 07 1B44 1B6A 1048 MVI BUALT,X'12' SET BUFFER BUSY ID
1589 C1 E2 15CB 1049 MVC BUMSG(8),BUFF MOVE BUFFER MSG
158D 3D 0C 0A03 1050 BUBY TIO BSYLP,PBBUSY PRINT BUFFER BUSY
1591 F2 01 08 1051 CLI RNUM,X'0C' THIS THE RIPPLE PRINT ROUT.
1594 6C 5F 5F 5F 1052 JNE SKIDO
1598 6C 00 00 60 1053 FRSMV MVC 95(96,XR1),95(,XR2) RIPPLE MOVE 96,120,OR 132 CHAR.INTO
159C C0 87 0212 1054 SNDMV MVC O(1,XR1),96(,XR2) THE DATA AREA FROM PFIELD
15A0 0C 01 15D4 185C 1055 SKIDO B TEST GO READ DATA SWITCHES
15A6 3C 13 1600 1056 MVC DELAY+3(2),ADCABY PUT IN LOOP ADDR.
15AA 0C 07 1B44 1B5A 1057 MVI BUALT,X'13' SET CARR.HALT ID
15B0 C1 00 15CB 1058 MVC BUMSG(8),CARR MOVE CARR.MSG
15B4 0C 01 15D4 185E 1059 CABY TIO BSYLP,*-* CARRIAGE BUSY
15BA 3C 14 1600 1060 MVC DELAY+3(2),ADPIBY PUT IN LOOP ADDR.
15BE 0C 07 1B44 1862 1061 MVI BUALT,X'14' SET PRINTER BUSY HALT ID
15C4 C1 E6 15CB 1062 MVC BUMSG(8),PRIN MOVE PRINTER BUSY MSG
15C8 F2 87 36 1063 PIBY TIO BSYLP,BUSY PRINTER BUSY
15CB CF 02 1FA5 1823 1064 J CHRDY
15D1 C0 01 0000 1065 BSYLP SLC BUSUB(3),ONE TRY FOR ABOUT 3 SECONDS TO
15D5 C0 87 1656 1066 DELAY BNZ *-* CLEAR BUSY
15D9 C0 87 1609 1067 B STERR CHECK FOR STATUS ERROR
15DD 3A 01 1F8B 1068 B SDEHF
15E1 0C 00 1780 1600 1069 SBN TAGS,TAG7 SET PRINT 1ST LINES ONLY FLAGS
15E7 C0 87 1732 1070 MVC HLTID(1),BUALT PUT HALT ID IN MSG
15EB C0 87 021A 1071 B PSTERR GO PRINT STATUS OR 1ST LINES
15EF 81 15EF 1072 CC XL1'81' PRINT BUSY MSG
15F0 1B 15F0 1074 DC IL1'27'
15F1 1B52 15F2 1075 DC AL2(BUTOLO)
15F3 C0 87 021A 1076 B PRINT PRINT PRINTER MAP CHART NO.
15F7 85 15F7 1077 DC XL1'85'
15F8 CA 15F8 1078 DC IL1'10'
15F9 1BD1 15FA 1079 DC AL2(MAP)
15FB C0 87 0222 1080 B HALT BUSY HALT
15FF E000 1600 1081 BUALT DC XL2'E000'
1601 C1 E0 163C 1082 CHRDY TIO NRDYER,NRDY
1605 C0 87 1656 1083 B STERR BR TO CHECK ERR STATUS
1609 C0 87 1732 1084 SDEHF B PSTERR GO PRINT STATUS OR 1ST LINES
160D 3D 0D 0A03 1085 CLI RNUM,X'CD' IN UNPRTABLE CHAR TEST
1611 F2 81 3C 1086 JE XIOEXT YES, GET OUT
1614 38 02 1F93 1087 TBN STAT6,B'10' UNPRTABLE BIT ON
1618 F2 90 29 1088 JF XIOEXT
161B CC 87 021A 1089 B PRINT PRINT UNPRTABLE CHAR SKIPPED

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EO13 5203 LINE PRINTER FUNCTION TESTS

EO13 5203 LINE PRINTER FUNCTION TESTS

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
17CF 0A	17CF 1226	DC	IL1*10*
17D0 180	17D1 1227	DC	AL2(MAP)
17D2 C0 87 021A	1228	B	PRINT SPACE 5
17D6 15	17D6 1229	DC	XL1*15*
17D7 0C 01 17E2 1780	1230	MVC	PUIDIN(2),MLTID PUT ID INTO HALT
17D0 CC 87 C222	1231	B	HALT *STATUS ERROR HALTS
17E1 E000	17E2 1232	DC	XL2*E000*
17E3 38 10 020A	1233	TBN	SBYTE2,SSW13 SSW -13 ON(ND ALT.PRTR.) ?
17E7 F2 90 2E	1234	JF	TESER HMR.ECHO CHK.?
17EA 38 04 1F92	1235	TBN	STAT6-1,8*100*
17EE F2 90 27	1236	JF	TESER
17F1 3C 0A 17F6	1237	MVI	BUTIN+1,X*0A* PUT HAMMER
17F5 3D 0A 1F94	1238	BUTIN	CLI STAIK-1,X*0A* NUMBER
17F9 F2 62 1C	1239	JL	MCWIT INTO
17FC 0E 00 1F94 182A	1240	ALC	STAIK-1(1),SIX THE
1802 0E 00 17F6 182D	1241	ALC	BUTIN+1(1),XTEN HALT
1808 C0 87 17F5	1242	B	BUTIN LIGHTS
180C 0C 00 1817 1F94	1243	MOWIT	MVC MLESID(1),STAIK-1 DISPLAY HAMMER NO.
1812 C0 87 0222	1244	B	HALT
1816 E000	1817 1245	MLESID	DC XL2*E000*
1818 3B 01 1F8B	1246	TESER	SBF TAGS,TAG7 RESET 1ST LINE ONLY FLAG
181C C0 87 0000	1247	PREXIT	B *** RETURN

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	1249	*****	
	1250	* CONSTANTS *****	
	1251	*****	
1820 0000	1821 1252	ZERO	DC IL2*0*
1822 0001	1823 1253	ONE	DC IL2*1*
1824 0002	1825 1254	TWO	DC IL2*2*
1826 0003	1827 1255	THREE	DC IL2*3*
1828 0004	1829 1256	FOUR	DC IL2*4*
182A 06	182A 1257	SIX	DC IL1*6*
182B 0008	182C 1258	EIGHT	DC IL2*8*
182D 1C	182D 1259	XTEN	DC XL1*10*
182E 000C	182F 1260	TWELVE	DC IL2*12*
1830 0011	1831 1261	SVNTEN	DC IL2*17*
1832 0015	1833 1262	THYUN	DC IL2*21*
1834 001A	1835 1263	THYSIX	DC IL2*26*
1836 C188C0	1838 1264	BUSCT	DC XL3*18800*
1839 C40000	1838 1265	BUSCTI	DC XL3*40000*
183C 2A2A	183D 1266	FL42	DC XL2*2A2A*
183E 5555	183F 1267	FL85	DC XL2*5555*
1840 7070	1841 1268	FOLG	DC XL2*7070*
1842 65	1842 1269	UNOSVN	DC IL1*107*
1843 77	1843 1270	UNITIN	DC IL1*119*
1844 7B	1844 1271	ONTUTR	DC IL1*123*
1845 0800	1846 1272	LPIADR	DC XL2*800*
1847 082F	1848 1273	TUFORF	DC XL2*82F*
1849 087C	184A 1274	LPDADR	DC XL2*87C*
184B 08FF	184C 1275	DADEND	DC XL2*8FF*
184D 1F00	184E 1276	SIADD	DC XL2*1F00*
184F 1D4C	1850 1277	SFHU	DC IL2*7500*
1851 F0	1851 1278	DECZRO	DC DL1*0*
1852 F1	1852 1279	DECONE	DC DL1*1*
1853 183D	1854 1280	ADFL42	DC AL2(FL42)
1855 183F	1856 1281	ADFL85	DC AL2(FL85)
1857 1841	1858 1282	ADFOLG	DC AL2(FOLG)
1859 1585	185A 1283	ADBUBY	DC AL2(BUBY)
185B 1580	185C 1284	ADCABY	DC AL2(CABY)
185D 15C4	185E 1285	ADPIBY	DC AL2(PIBY)
185F 1F8D	1860 1286	STOAD	DC AL2(STATO)
1861 1F8C	1862 1287	STOM1	DC AL2(STATO-1)
	1288		
	1289	*****	
	1290	* PRINTOUTS *****	
	1291	*****	
1863 03C9D5C5	1866 1292	DC	CL4*LINE*
1867 404040	1869 1293	DC	CL3* ' '
186A 40	186A 1294	DASH	DC CL1* ' '
186B 614040D7D9C9D5E3	1876 1295	PRTOP	DC CL12*/ PRINT &*
1873 40404050	1295		
1877 614040E2D7C1C3C5	1882 1296	SPOP	DC CL12*/ SPACE *
187F 40404040	1296		
1883 61E2D2C9D740E3D6	188C 1297	DC	CL10*/SKIP TO *
188B 4040	1297		
188D 4040	188E 1298	SKLIND	DC CL2* ' '
188F D3C9D5C540	1893 1299	DC	CL5*LINE*
1894 404040	1896 1300	DC	CL3* ' '
1897 61D7D9C9D5E350	189D 1301	DC	CL7*/PRINT&*
189E E2D7C1C3C540	18A3 1302	DC	CL6*SPACE*
18A4 4040	18A5 1303	POPSUD	DC CL2* ' '
18A6 404040	18A8 1304	DUSPOP	DC CL3* ' '
18A9 E2D2C9E740E3D6	18AF 1305	DC	CL7*SKIP TO*
18B0 40404040	18B3 1306	DSKPGP	DC CL4* ' '
18B4 D5D640E2E3C1E3E4	18C6 1307	DC	CL19*NO STATUS CHK.BUT *
18BC E240C3C8D24BC2E4	1307		
18C4 E34040	1307		
18C7 404040404040	18CC 1308	WICH	DC CL6* ' '
18CD C3C1D9C948D3C9D5	18E0 1309	LICOER	DC CL20*CARR.LINE CTR.IN ERR*
18D5 C540C3E3D948C9D5	1309		
18DD 40C5D9D9	1309		

FORM LENGTH 42  
FORM LENGTH 85  
FORM LENGTH 112

IMAGE ADDR.

DATA ADDR.

RIGHT CARR.CTR.ADDR.  
LEFT CARR.CTR.ADDRC



E013 5203 LINE PRINTER FUNCTION TESTS

E013 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test procedures for the line printer function, including commands like EGAMI, LEBAL, ARWAL, DIRIS, DIRSB, NOPLIO, CHACHE, and various EQUATEs.

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test procedures for the line printer function, including EQUATEs for X registers, ARR, XR1, XR2, LPI, ATETUF, LPD, ATSVNS, UCSFLG, DASTU, ATEFIV, ATEATE, PRDAT, EDIMAG, PFIELD, LOFOLG, LPIAR, LPDAR, TEST, LINK, PRINT, UNPACK, HALT, LOAD, NRDY, BUSY, CABUSY, RICABY, PBBUSY, TAG6, TAG7, SBYTE0, SBYTE1, SBYTE2, SSW05, SSW08, SSW11, SSW12, SSW13.

E013 5203 LINE PRINTER FUNCTION TESTS

E013 5203 LINE PRINTER FUNCTION TESTS

ERR LGC OBJLCT CCDE ADDR STMT SOURCE STATEMENT

CROSS-REFERENCE

```

1501
1502
1503 *          COMMENT CARDS
1504
1505 ***** SECTION E01 ROUTINES *****
1506 * ROUT.01 - SENSE CMD TEST
1507 * ROUT.02 - TIO NOT RDY TO NOT RDY PRTR.
1508 * ROUT.03 - TIO BUSY TO NOT RDY PRTR.
1509 * ROUT.04 - TIO NOT RDY TO RDY PRTR.
1510 * ROUT.05 - TIO BUSY TO RDY PRTR.
1511 * ROUT.06 - LIO'S TO RDY PRTR.
1512 * ROUT.07 - CMDS TEST.
1513 * ROUT.08 - CARRIAGE SPACE/SKIP TEST.
1514 * RCUT.09 - 'H & T' PRINT TEST.
1515 * ROUT.0A - PAPER SETTLING TEST.
1516 * ROUT.0B - WORSE CASE PRINT TEST.
1517 * ROUT.0C - RIPPLE PRINT TEST.
1518 * ROUT.0D - UNPRINTABLE CHAR TEST.
1519 * ROUT.0E - ENTER YOUR OWN CMDS TEST.(MUST BE REQUESTED BY OPERATOR)
1520 *****
1521 * SSW OPTIONS
1522 *****
1523 * SSW-11 - HALT BETWEEN CMDS (VALID IN ROUTINES 7,8,9,0B,0C & 0E)
1524 * SSW-12 - DELAY BETWEEN CMDS (VALID IN ROUTINES 7,8,9,0B,0C & 0E)
1525 * SSW-13 - SECONDARY HALT OPTION (DIAGNOSIS OF ONLINE ERROR DATA)
1526 *****
1527 * NOTES -
1528 * 1.RESTORE CARRIAGE(S) BEFORE STARTING THIS SECTION.
1529 * 2.CARRIAGE FORMS MUST BE LEFT ALIGNED IN PRINT POSITION 1,EVEN IF
1530 * THE RIGHT CARRIAGE IS BEING TESTED.
1531 * 3.SET C.E.SWITCH TO OVERRIDE IDLE CONTROL BEFORE RUNNING THIS TEST.
1532 *****
1533
FFFF 1534          END

```

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ACBUBY	A	002	185A	1283	1047
ADCABY	A	002	185C	1284	1056
ADDATE	A	001	1CF4	0661	0684* C697 0699*
ADFL42	A	002	1854	1280	C384 0385 0386
ADFL85	A	002	1856	1281	0390 0391 0392
ADFOLG	A	002	1858	1282	0394 0395 0396 0964
ADPIBY	A	002	185E	1285	1060
ADTUSX	A	004	112C	0683	0672 0698
AD107	A	006	16EF	1157	1150 1154
AD119	A	006	16E6	1155	1152
ARR	C	001	0008	1458	0825 0846 0921* 0922 0923* 0924 0925 0926* 0927 0942 0965* 0966
					C967* 0968 1119 1177
					0256 0286
ARWAL	A	017	1C42	1392	1027
ASTERR	A	004	172E	1176	0282
ATAD	A	005	1C27	1389	0532* 0533 0548* 0549
ATEATE	C	001	080B	1468	0533* 0549*
ATEFIV	C	001	0808	1467	0631
ATETUF	C	001	082F	1462	0635
ATSVNS	C	001	0877	1464	1162
AWDJN	A	004	1715	1165	0129
BABUSY	A	012	18C7	1374	0419
BACGD	A	004	0D1C	0353	0770 0772 0790 0792
BADCMD	A	005	11F5	0777	0203* 0209* 0213* 0217* 0230
BERALT	A	002	08FB	0224	0244 0531 0995
BROUT	A	004	140A	0942	0942* 0947
BSEXIT	A	004	142E	0951	1050 1059 1063
BSYLP	A	006	15C8	1065	1048* 1C57* 1C61* 1070
BUALT	A	002	1600	1081	1283
BUBY	A	004	1589	1050	C208 1C49
BUFF	A	008	186A	1365	1049* 1058* 1062*
BUMSG	A	008	1844	1361	1046
BUSCT	A	003	1838	1264	0943
BUSCTI	A	003	1838	1265	0205
BUSLE	A	006	08C8	0211	0206
BUSRI	A	006	080B	0215	0943* 0944* 1046* 1065*
BUSUB	A	003	1FA5	1421	0122 0191 0199 0542 0946 1024 1063
BUSY	C	001	00E6	1482	1237* 1241* 1242
BUTIN	A	004	17F5	1238	1075
BUTOLD	A	014	1852	1362	C68C*
BWHER	A	004	114F	0693	0542
BZQOP	A	004	0FAA	0544	0205 0537 1009
CABUSY	C	001	00E4	1483	1005* 1009* 1284
CABY	A	004	158C	1059	0211 0215 1058
CARR	A	008	185A	1363	0846*
CCGD	A	004	128C	0849	0065
CHACHE	A	037	1C9C	1398	1064
CHRDY	A	004	1601	1082	0104 0171
CHT10	A	002	18D3	1376	1223
CHT11	A	002	18D5	1377	0046 0246
CHT13	A	002	18D7	1378	0433
CHT14	A	002	18D9	1379	0708 1094
CHT16	A	002	18DB	1380	0131 0225 1018
CHT17	A	002	18DD	1381	0067
CHT19	A	002	18DF	1382	0337 0819
CKCMD	A	004	12A3	0846	0915
CKDDNE	A	005	12A8	0848	0376 0386* 0392* 0396*
CKCUNT	A	006	0D69	0374	0774
CKSKIP	A	003	1213	0789	C418
CLINK	A	004	0E76	0441	0354* 0368 0373 0381 0777* 0780 0803* 0807 0856* 0880 0883 0885
CMDSAV	A	002	1F97	1413	0891 C898 0900* 0902 0904 0906
					0336
CMOTAB	A	001	1FA6	1425	0971* 0972 0973 0986 1001* 1002 1003 1008 1013 1019 1022
CMND	A	003	150D	1017	1040*
CMODE	A	002	1566	1042	1043*
CNCO	A	002	1572	1045	0874
COCOCO	A	004	1317	0877	





E013 5203 LINE PRINTER FUNCTION TESTS

E013 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
STECK1	A	004	168E	1133	1131*
STECK2	A	004	168F	1134	1132*
STERR	A	004	1656	1119	0990 1067 1083 1102
STEXIT	A	004	172A	1171	1119* 1169*
STILL	A	006	C89C	0201	C199
STSA1	A	002	1655	1117	1120* 1170
STOAO	A	002	186C	1286	1007
STOM1	A	002	1862	1287	1011
SUBGAN	A	006	1702	1161	1164
SUNERD	A	004	CEAF	0468	0462
SVNTEN	A	002	1831	1261	0400
TAGS	A	001	1F88	1407	0420* 0423 1025* 1069* 1126* 1138* 1206 1246*
TAG6	C	001	0002	1487	0423 1126 1138
TAG7	C	001	0001	1488	0420 1025 1069 1206 1246
TALT	A	004	0AD8	C109	C098
TECHB1	A	004	0A63	0058	C056*
TEES	A	003	18F4	1312	0548
TEGAN	A	004	0FA3	0542	0545
TEPC U	A	004	08EB	0218	0207 0210 0214
TESER	A	004	1818	1246	1207 1234 1236
TEST	C	001	0212	1475	1055
TFEL	A	005	1874	1367	0212 0414 1178
THGIR	A	005	186F	1366	C216 041C 1181
THROUT	A	004	0F08	0556	0553
TIOCHK	A	004	145A	0988	0979 C994
TITL A	A	019	1917	1314	C506
TITLB	A	021	192C	1315	0572
TITL9	A	016	1904	1313	0457
TIXE	A	004	1406	0937	0927* 0934
TNIRP	A	004	0E56	0429	0427
TOBYT	A	006	13FC	0935	C929*
TOLONG	A	004	1424	0948	0945
TON	A	022	1BAD	1371	0089
TREE	A	032	1827	1255	0582
TUFORF	A	002	1848	1273	0585
TN	A	006	0B7C	0194	C197
TWLVE	A	002	182F	1260	0371 0875 0889 C896
TNO	A	002	1825	1254	0353 0581 0793 0804 0899 0914 0923
THYS IX	A	002	1835	1263	C683
THYMUN	A	002	1833	1262	1159
TYBOT	A	006	130B	0929	C924*
TYBS	A	004	0821	0153	0151
UCSFLG	C	001	0878	1465	0054 0633
UFERR	A	006	088B	0208	0204
UNCSK	A	015	194F	1318	0670
UNITIN	A	001	1843	1270	1155
UNOSVN	A	001	1842	1269	1157
UNPACK	C	001	021E	1478	0258 0262 0288 0292 0778 0805 1198
UPCER	A	004	116E	0701	0690
WAHOL	A	004	1501	1014	1016
WAT	A	006	1289	0830	0833
WHIMLT	A	004	122B	0796	0788
WICH	A	006	18CC	1308	0410* 0414* 0426*
WORK	A	002	1F9F	1417	
WT	A	006	147C	0982	C974 C585
WUDF	A	019	197D	1321	0706
WUNTH	A	004	113C	0684	C682
XIO	A	006	1432	0964	0349 C441 0472 0487 0523 0550 0577 0588 0644 0686 0701 0715
XIOEXT	A	004	1644	1104	0912
XR1	C	001	0001	1459	0987 1086 1088 1101
					C336* C352* 0353* C354 C378 C382 0388 0404 0417 0541* 0544* 0580*
					0582* 0583 0637* 0681* 0683* 0685 0688 0691 0696* 0757* 0764 0765
					C767 0769 0771 C773 0775 0777 0789 0791 0793* 0794 0802* 0803
					0804* 0813 0817* 0848 0850 0851 0853 0856 C900 0914* 0969 1053
					1054 1104* 1120 1127* 1128 1128* 1129 1131 1132 1136 1137 1170*
XR2	C	001	0002	1460	0355* C366 0371* 0372 0380 0400* 0401 0479* 0482* 0484 0579* 0581*

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
					0583 0584 0638* 0672* 0679* 0680 0871* 0872 0875* 0876 0887 0889*
					0890 C896* 0897 0901 0970 1053 1054 1105*
XTEN	A	001	182D	1259	1241
YBATS	A	004	1A3A	1333	1201 1205
YEQW	A	002	0C15	0232	0230*
YESER	A	004	1670	1126	1123
ZERO	A	002	1821	1252	0541 C765 0813 0848 0902
ZIGOUT	A	004	1043	0594	0591
ZROTO	A	006	13ED	0932	0930*

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0



E013 5203 LINE PRINTER FUNCTION TESTS

OBJECT CARD LISTING

THE CHARACTER INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+-Y:8A< . . . B-a ~U;A& DA & HU3- AB-32D &a . . . Y+<< ~V&4AG9MH&C7HA1L- D-T2UAT /OH&EJ \$/+ . . . 43&E0130001

E013 5203 LINE PRINTER FUNCTION TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+->J<33TC, LB -/ :|D H~-&&F1YQMLQ BFBUFDAX&FEH< & \$FT5 B|# -&#D&H\* M<>HA&H\*+U&BG /Y MOH\* MQ&E0130022

E013 5203 LINE PRINTER FUNCTION TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96  
T+/LTD#-... QMG@ DN-QH#HBB-Q -... QM#BGD#| /O ( -M<@OBG:MQ+O@ BG:MQH#HAA@GWEAL 2/OY @34E0130044  
T+/J;OH#BH> JOH# MC#BG < JLBFE- 6BA-T (-MNLQHFB< 4BAR| ( DOML @BEV< < JM| < < J=)E&@ 9@AM 30UE0130045  
T+/KRC?E&FL/ --, 2U |O-A#8H HH&Z' W< --XL?CGSC('O- B' (+O- B' | J= )FB| /AJ@+- NC# &EUE @S\*E0130046  
T+/LMO; MY-HGD#E GEV\$ /1\*20H#BH> &CH#M#W#BGE Y1SA/ F<;QOKTG- ... 8- H I@Z' D+--NC-OAG9D NC3- 7Z@E0130047  
T+/M|BAM+@Z J|+O NZL3YG:Y< JMYFFC 2/2D@9A01|+ -D-O AEK-CQT4IB-|2 &O 08/|=|+ D-T#B&E&G 3 ... Q1#E0130048  
T+/NHC D\$4J7)C&D NC1=,@YEM+ -T&4 EG@ |HAJ@GWEPK : J=.C P-ANLOH# P.#BG /DAGJ#7OH\* BFYM E9DE0130049  
T+/OEB/7JOH#BH> O+A BB?H&F O EQQ -U<PG S.- O EPH -U\*BG S.- OBG:M Q+ OAE|EQOTOKE- <A1% 4Q&E0130050  
T+/P JA\_DG;MN234 <B-|2 /XP5'-S' Q<BG /H< JPMFEO @D1Q C \*\$JA\_E0E N200AE)EQPTOME- <A1% OS E0130051  
T+/P#JA\_S0;QN2#H G(-@BG:MQH@ A C /1ROCH\*OBLVAG8% < A; E-C /1\*20H# BFYD\$F5. /OH/E/Y \$4\* :RYE0130052  
T+/Q6/OHS8 CABAQ @OH\*ON#BGE3H'CEY @AYDO+ H-U#F&H#B G /,AGJV|B O< J? JF\*? /OH/E/Y\$4#B G SH '\$-E0130053  
T+/R18 32/OT /1R COH#PKTMAEVD5 /R LOH# ..... C& HE244 JRN<+<-U3X 6G9.2U \*98A=L@/B O+OH #I E0130054  
T+/E#G87B JZ<4-D L--@ @YF-G OT \* AEE LU G9H9 A= LGA O;A0 E8 BG @ EP/H: /=.<+Q-V&4 AG9M J8QE0130055  
T+/S#FD,2--U< J= NFD32A U<AA#EF; 2/GH| A=NFD&FA= N@Y&X|J -V-HDE34 (G9P2 -\* AA=N@Y& IC- 8&@E0130056  
T+/S69MQ@HGC08 G9MQ@7HGA-@ G9M QK30 G9E| A=NFBX 2--Y+ A=MFB| /1\* BOH#L>J=MFI,2/OQ +J\* E&DE0130057  
T+/I J-Z (&DGN#B G ... 0B1=L(-QG00 DF/D\$)C-HG9C2U Q <AAYJF# /1+9G9D Q#00 FHM#Q#00&FS< QDC- )=HE0130058  
T+/Q /=&@/ FC M EFAYZ+ &U|HGA-O HFS<Q#BG /,AIJY T8 C /OH; /LFT, /OHE-JDE+T-AG8? 2DG@ 1#0E0130059  
T+/LOH#BIYDUFB 90A=L@Z \*J -U7H &EL-DG9.2U # /OH E-J \$F-OAF1\*EH&O AF'D\$5\*BG /DAB/? JOH# #J4E0130060  
T+/+ /YNC DP8/; OH#BH> +A BB?H &.T-DG9.2UB\*@B/- 6|EY-V|HBD 8 G9& QH-8 E#QQ.\*BGE#M < /- #.DE0130061  
T+/I E1=MOH#BH> +OD-S@BG ..... A H O DA- HD < AD E& E Q- A HSNZNPAD@E7|)B H. O- 2S@E0130062  
T+/SU- T#GO )LIC 1FC4Q|1/AEQUN#AP DGB4-T(|15\*N &DA QMA 5\*X15;| &DA &QMA 8\_-A0@N &DA Q;H 'A\*E0130063  
T+/S#4#XPE+|Q&DA &(|15\*N &DA Q)~ R2)PTM+.PO\*|E&DA &DA 8\_-154CT5UA &DCN5UCS@@GT9+I @@- 89DE0130064  
T+/T:4U?B9+| &DA &DA &<|A6)V.4@X NIMCC8\*V.2)N 1)X RQFCF5\_XM&(|E5+ T2DA &DCT8=(#2EC T-M' HE0130065

E013 5203 LINE PRINTER FUNCTION TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96  
T+/U55'XI5;( 8@P S8'-A5@PRE+.E8=| L2)PG&+|E8>|W5\_X SIMCC0;.E&(-R2)P T&+|E8>|R2|-P4@N 'S'U K&YE0130066  
T+/V02)PT8@PS84C F5\_V 9(|PP6;|AO\_| E&<|HO|V 2IN 1KG TCMCF2\*PL1DCB2;( 5)\$T&+.E84CW2;| HC+& 01ME0130067  
T+/W,5)-R8@GB4@N 1<GT0\*PN8@PRE(- R8'V.O'LDK@|O1KN 5\_V 1<PLO; / 8@X MIMCI5MCA1<LRK=. W-;H 'CDE0130068  
T+/XW6\*PS1;( 2<G L8&A-6\*PP1\*G T&<\$ 06MCM5\_XEQFCE5;| E6GC0@|COC+|O&<. E1@XN&<PX1\*|U8@X 05\*U 9Q@E0130069  
T+/Y/5;PL1D?C5<J 9=-X9@PN8\*X11;. X9=-X4@GS84CC5\_L MC|P|DQFCL1\*\$T&DC N5\_PE&DA &DA &DA &D 'EC8E0130070  
T+/Z\*EDA &DA &DC S8@GT9+I O>TT1;I &DA &(-R2)@R2;| Y&<PR6MCB2;( 2;I &DA &DA &DA &DA &D #.8E0130071  
T+/DP&D - LC2<G 15MCS:(PC&<|H4U\_ 'D E2)PC6MCS:(P CQ;.L2)) &A 'AZX NO'V 1#GI4=LR1MC C2(H 5D@E0130072  
T+/KA 12<GM5<P R&<PC2(R 0@TKKH B#GN:DCHO)LM6MC 05MCC2(H H -H5(V .8@TE6)LA44CC2(I .- 1#ME0130073  
T+/|A6)V.8>T NO4CC2(I.&DA ... CO)XRK=.PO\*|E&<| H4U\_ H 'C1\_ \$R5+I 4\*GM&<|H4U\_ &| H0|E RK<E 0130074  
T+/H5<PR&|PGK4A &DA &|P2@|( 5)\$ T&<.U8>/ 0\*\$T 1)V 8#XD&<GC5=|D'- 0@4A &DA &DA &DC B9+H @30E0130075  
T+/>C:DCT5\_R 4'\$ N1@|A6)X IO\*-E5'X I5;|E6MA 0>LF1#P R&(|X 1@TT4@PF 84C C5<J.1<PC5#LEE<P R6)Q =#ME0130076  
T+/>=6)LA4@N 'O@4A &DA 6\*PA1+T 5@?C3&<X&G(XD:F? S2<J.O#N 5)\$T&IX D:|P2@|( 0>LS:DC W2<M NROE0130077  
T+/?95MCM5>( 6\*L Y5=|RK@|H64\_ &|G 0@-G1@#G4@-S1\* #G 9'-0@4C18UCN5>( 6\*LYE=.H1D?B1MC R1+- LCYE0130078  
T+/O4'-.0@4A &DA &DA &DA &DA &<X S&<.U8>/,5)R 0'L DK@XSB>LE1DA 1<G TO\*XMO\*-E&DA &DA 0\*E :-ME0130079  
T+/171(V.6\*PGK' | 15UC6)X18UA &DA &+.H1D?B1MA &DA 5)R-5\_) 4@GT0@/ 8#PT&+\$18@/ 5)R 8#U K1&E0130080  
T.A2\*5UC18>.U1\*L C2<G15MCC2(I.E@X MO\*-E&EA 0@TA2)N 1(R 5)\$T&<GG6\*P E ..... D:<E0130081  
TH1= ..... #D ..... 5&YE0130082  
T+J#R ..... 9 G S + 8-C- ;H 8 . S + C8-GS >HC8-C UD;QC9-D +&D8 G UN; A9GC- ; B8 | - ..... '9ME0130083  
E#\*#E7#=-DC-#PH\$ =#7M&F| ..... C ..... F# ..... ASC ..... R A S0 ..... Q ..... 21231012711 11071#&@E0130084

E025 5203 LINE PRINTER FUNCTION TESTS

E025 5203 LINE PRINTER FUNCTION TESTS

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
2 *
3                   DECK 4
4                   SEQ 0
5 OA00 UVWXYZ START X'AQ0'
6                   TREP
7 *****
8 *
9 * SYSTEM/3 5203 LINE PRINTER FUNCTION TESTS
10 *
11 *****
12 * SECTION 2 - ROUTINES 1 & 2
13 *****
14 OA00 E025 OA01 DC XL2'EC25' PROGRAM IDENTIFICATION
15 OA02 00 OA02 DC XL1'0' FLAGS
16 OA03 01 OA03 RNUM DC XL1'1' CURRENT ROUTINE NUMBER
17 OA04 0000 OA05 DC XL2'0' RESERVED
18 OA06 0A10 OA07 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX
19 OA08 163D OA09 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE
20 OA0A E04000 OA0C SPUTA DC XL3'E04000' UNIT DEFINITION TABLE - PRINTER
21 OA0D 101000 OA0F DC XL3'101000' PRINTER KEYBOARD
22 *****
23 *
24 * ROUTINE 1 - SENSE COMMANDS ANALYSIS TEST
25 *
26 *****
27 OA10 01 OA10 RTN1 DC XL1'1' ROUTINE NUMBER
28 OA11 80 OA11 DC XL1'80' FLAGS - MANUAL INTERVENTION
29 OA12 0CB1 OA13 DC AL2(RTN2) ADDRESS OF NEXT ROUTINE PREFIX
30 *****
31 OA14 38 04 0209 31 TBN SBYTE0,SSW05 TEST FOR ALTERNATE PRINT DEVICE
32 OA18 F2 90 12 32 JF SKALT
33 OA1F 42 33 B PRINT
34 OA20 18 34 DC XL1'42' PRINT 'SENSE CMDS ANALYSIS TEST'
35 OA21 12C3 35 DC IL1'24'
36 OA23 E0E2 36 DC AL2(TITLE1)
37 OA25 C0 87 021A 37 DC XL2'E0E2'
38 OA29 01 38 B PRINT
39 OA2A 54 39 DC XL1'01' PRINT 'JMPR A-B1E5D10 TO A-B1D2S05,
40 OA2B 150A 40 DC IL1'84' RESTORE CARRIAGE(S), PRESS CHK
41 OA2D F0 7C 76 41 JC AL2(RELDR) RESET, THEN RESET HALT'
42 OA30 3D FF 0878 42 SKALT HPL X'76',X'7C' HALT E2: PREPARE PRINTER
43 OA34 F2 01 04 43 CLI UCSFLG,X'FF' 120 CHAR. SET
44 OA37 3C 00 129A 44 JNE MARCS
45 OA3E 39 01 0ACC 45 MVI EXPD3,X'00' PUT '00' IN STATUS BYTE
46 OA3F F2 10 08 46 MARCS TBF SPUTD,X'01' DUAL FEED CARR.
47 OA42 3C 01 1294 47 JT DOENSE
48 OA46 C0 87 0212 48 MVI EXPD3,X'01' PUT '01' IN RIGHT CARRIAGE LOCATION
49 B TEST READ DATA SWITCHES
50 *****
51 * DO FOUR SENSE COMMANDS
52 *****
53 OA4A 30 E0 129D 53 DOENSE SNS SENSO,X'E0' GET LINE LOCATIONS
54 OA4E 30 E1 129F 54 SNS SENSI,X'E1' GET INCRM.& C-C-CTR.
55 OA52 30 E2 12A1 55 SNS SENS2,X'E2' GET TIMINGS
56 OA56 30 E3 12A3 56 SNS SENS3,X'E3' GET STATUS
57 OA5A 3B 31 12A0 57 SBF SENS2-1,B'110001' IGNORE CHAIN EMIT,PSS-1 & HOME LATCH
58 OA5E 3B 01 12A3 58 SBF SENS3,B'1' IGNORE CE SENSE BIT
59 OA62 C2 01 1293 59 LA EXPTAB,XR1 LOAD TABLE ADDR.
60 OA66 C2 02 129C 60 LA SENTAB,XR2 LOAD TABLE ADDR.
61 OA6A 0C 01 162A 1263 61 MVC EBZERC(2),ZERO ZERO ERR COUNTERS
62 OA70 3B 68 1628 62 SBF TAGS,X'68' RESET A CMD CORRECT & CMD-ERR FLAGS
63 OA74 6D 01 01 01 63 SENEXT CLC I(2,XR1),I(,XR2) ACTUAL SENSE MATCH EXPECTED
64 OA78 F2 01 67 64 JNE ANERR
65 OA7B 3A 20 1628 65 SBN TAGS,TAG2 SET A CMD. CORRECT FLAG
66 OA7F 0D 01 162A 1263 66 CLC EBZERC(2),ZERO ANY BYTES IN ERR YET
67 OA85 F2 01 8F 67 JNE WFROM IF NOT KEEP GOIN'
68 OA88 36 01 1269 68 GURGAN A TWD,XR1 ADD TWD FOR NEXT CMD.
69 OA8C 36 02 1269 69 A TWD,XR2 ADD TWD FOR NEXT CMD.

```

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
70 CLC O(,XR1),X'FF' CHECKED ALL CMDS
71 BNE SENEXT
72 TBN TAGS,TAG2 ALL CMDS.CORRECT
73 BF ALBAD
74 TBN TAGS,TAG1
75 BF SYNARA
76 J WFROM
77 *****
78 * ALL SENSE COMMANDS FAILED
79 *****
80 ALBAD MVI WCEB,X'F2' PUT EB2 IN MSG.
81 CLI EB1ERC,X'00' ANY EB1 ERRS
82 JE SKIBIT IF NOT
83 MVI WCEB,X'F1' PUT EB1 IN MSG.
84 CLI EB2ERC,X'00' ANY EB2 ERRORS
85 JE SKIBIT
86 MVI IDALT,X'41' SET HALT ID
87 B PRINT PRINT 'ALL SENSE CMDS FAILED'
88 DC XL1'C2'
89 DC IL1'21'
90 DC AL2(ALSCF)
91 DC XL2'E041'
92 J CUTLOG
93 SKIBIT MVI IDALT,X'42' GOLOG OUT ACTUAL/EXPECTED BYTES
94 B PRINT
95 DC XL1'C2'
96 DC IL1'52'
97 DC AL2(CNLBYT)
98 DC XL2'E042'
99 J CUTLOG GO LOG OUT
100 *****
101 * ACTUAL DOES NOT MATCH EXPECTED
102 *****
103 ANERR CLC I(1,XR1),I(,XR2) IS THE EB1 BYTE IN ERR
104 JE MUSBTU
105 ALC EB1ERC(1),ONE ADD TO EB1 IN ERR
106 CLC O(1,XR1),O(,XR2) IS THE EB2 BYTE IN ERR
107 JE ANBAD
108 MUSBTU ALC EB2ERC(1),ONE ADD TO EB2 IN ERR
109 ANBAD TBN TAGS,TAG1 ANY ERRS YET?
110 JF SEEF
111 SBN TAGS,TAG4
112 J ANYGUD
113 SEEF SBN TAGS,TAG1 SET ERR FLAG
114 MVC EDCC(2),9(,XR2) PUT CMD.CODE IN MSG.
115 ANYGLD B GORGAN
116 WFROM MVI IDALT,X'43'
117 B PRINT PRINT THE SENSE CODE IN ERR
118 DC XL1'C2'
119 DC IL1'20'
120 DC AL2(SCOIE)
121 DC XL2'E043'
122 *****
123 * LOG OUT ALL COMMANDS WITH ACTUAL AND EXPECTED BYTES
124 *****
125 OUTLOG LA EXPTAB,XR1 LOAD TABLE ADDR.
126 LA SENTAB,XR2 LOAD TABLE ADDR.
127 SCARD MVC LFTCOD(2),9(,XR2) PUT CMD.CODE IN MSG
128 MVC RYTCGD(2),I(,XR2) PUT CMD.CODE IN MSG
129 ST LEX2,XR1
130 B UNPACK
131 DC IL1'1'
132 LEX2 DC AL2(-) FROM
133 DC AL2(LEXEB2) TO
134 A CNE,XR1 ADD 1 TO TABLE ADDR.
135 ST LEX1,XR1 STORE FROM ADDR.
136 B UNPACK
137 DC IL1'1' PUT LEFT EXP.EB1 IN MSG.

```

E025 5203 LINE PRINTER FUNCTION TESTS

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test instructions and expected outputs for the 5203 line printer.

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test instructions and expected outputs for the 5203 line printer, including routine numbers and flags.

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for printer function tests, including instructions like JPTITL, BAPRT, JF JALT, etc.

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for printer function tests, including instructions like TBN TAGS,TAG3, JT SKIMED, SBN TAGS,TAG3, etc.

E025 5203 LINE PRINTER FUNCTION TESTS

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
OE97 OC 01 0EA6 0000   410 CTORZ MVC ZRTO+3(2),*-
OE9D OC 00 0E6E 0000   411 FROBYT MVC HXBYT(1),*-
OEAB 04 20 0000 1283   412 ZROTC ZAZ *-*(3),DECZRO(1) PUT BYTE IN WORK AREA
OEAB 04 20 0000 1283   413 DECCAN SLC HXBYT(1),ONE ZERO THE TO AREA
OEAF F2 82 0A         414 JL TIXE DECREMENT THE HEX BYTE
OEB2 06 20 0000 1284   415 TOBYT AZ *-*(3),DECONE(1) EXIT IF BELOW 1
OEB8 C0 87 0EA9      416 B DECCAN INCREMENT THE DEC. COUNT
OEB8 C0 87 0EA9      417 TIXE B *-
OEB8 C0 87 0000      418 ***** RETURN
OEB8 C0 87 0000      419 * CHECK FOR BUSY AND DELAY SUBROUTINE *****
OEB8 C0 87 0000      420 *****
OEB8 C0 87 0000      421 BROUT ST BSEXIT+3,ARR LOAD RETURN ADDR.
OEB8 C0 87 0000      422 SDC MVC BUSUB(3),BUSCTI TRY FOR 7.5 SEC TO CLEAR ANY BUSY
OEB8 C0 87 0000      423 FLOOP SLC BUSUB(3),ONE
OEB8 C0 87 0000      424 JZ TOLONG
OEB8 C0 87 0000      425 TIO FLOOP,BUSY
OEB8 C0 87 0000      426 J BSEXIT
OEB8 C0 87 0000      427 TOLONG B HALT
OEB8 C0 87 0000      428 DC XL2'E011' *ERROR - PRINTER BUSY
OEB8 C0 87 0000      429 B SDC BUSY ID.
OEB8 C0 87 0000      430 BSEXIT B *- TRY AGAIN
OEB8 C0 87 0000      431 ***** RETURN
OEB8 C0 87 0000      432 * XIO ***** XIO *
OEB8 C0 87 0000      433 *****
OEB8 C0 87 0000      434 *
OEB8 C0 87 0000      435 * THIS ROUTINE ISSUES AND CHECKS AN EXECUTE I/O COMMAND AS
OEB8 C0 87 0000      436 * SELECTED BY THE MAINLINE PROGRAM. LINKAGE TO THIS SUBROUTINE
OEB8 C0 87 0000      437 * IS AS FOLLOWS-
OEB8 C0 87 0000      438 *
OEB8 C0 87 0000      439 * B XIO
OEB8 C0 87 0000      440 * DC 2,X*Q CODE & CONTRGL CODE OF COMMAND*
OEB8 C0 87 0000      441 *
OEB8 C0 87 0000      442 *****
OEB8 C0 87 0000      443 XIO MVC FRMLE+3(2),ADFCLG PUT IN 112 FORM LENGTH ADDR.
OEB8 C0 87 0000      444 A CNE,ARR
OEB8 C0 87 0000      445 ST LDCMD+5,ARR LOAD PARAMETER POINTER
OEB8 C0 87 0000      446 A CNE,ARR
OEB8 C0 87 0000      447 ST EXIT+3,ARR SET UP EXIT
OEB8 C0 87 0000      448 ST SAVWUN,XR1 SAVE REG. 1
OEB8 C0 87 0000      449 ST SAVTUU,XR2 SAVE REG.2
OEB8 C0 87 0000      450 LDCMD MVC CMND+2(2),*- SET UP COMMAND FROM PARAMETER
OEB8 C0 87 0000      451 MVC MSECS(2),CMND+2 IF ENTRY IS -OXXX-, GO DELAY
OEB8 C0 87 0000      452 TBF CMND+1,X*FO*
OEB8 C0 87 0000      453 JT WT
OEB8 C0 87 0000      454 TBN SBYTE2,SSW11 BRANCH IF SSW11 OFF
OEB8 C0 87 0000      455 JF CSSWOA
OEB8 C0 87 0000      456 HPL X*1B*,X*7C* HALT ON E4
OEB8 C0 87 0000      457 CSSWOA TBN SBYTE2,SSW12 DELAY BETWEEN CMDS.
OEB8 C0 87 0000      458 JF TIOCHK
OEB8 C0 87 0000      459 SAS MSECS,X*O* READ DATA SWITCHES FOR DELAY
OEB8 C0 87 0000      460 SBF MSECS-1,X*FO* TURN OFF HIGH ORDER 4 BITS OF DELAY
OEB8 C0 87 0000      461 WT CLC LPI(256),LPI 1 MILLISECOND DELAY
OEB8 C0 87 0000      462 CLC LPI(60),LPI
OEB8 C0 87 0000      463 SLC MSECS,ONE(2) DO FOR DESIRED NUM OF MILLISECS
OEB8 C0 87 0000      464 BH WT
OEB8 C0 87 0000      465 TBF CMND+1,X*FO* DO NOT EXECUTE COMMAND IF DELAY
OEB8 C0 87 0000      466 BT XIOEXT
OEB8 C0 87 0000      467 TIOCHK TIO ERNRDY,NRDY BRANCH IF NOT READY
OEB8 C0 87 0000      468 J TIOCK
OEB8 C0 87 0000      469 ERNRDY B STERR BR TO CHECK STATUS
OEB8 C0 87 0000      470 B PSTERR GO PRINT STATUS OR 1ST LINES
OEB8 C0 87 0000      471 B HALT *PRINTER NOT READY
OEB8 C0 87 0000      472 DC XL2'E010' NOT READY ID.
OEB8 C0 87 0000      473 B TIOCHK
OEB8 C0 87 0000      474 TIOCK B BROUT BR TO CHECK STATUS
OEB8 C0 87 0000      475 B STERR GO PRINT STATUS OR 1ST LINES
OEB8 C0 87 0000      476 B PSTERR LOAD LSR ADDRESS REGISTER
OEB8 C0 87 0000      477 LIO LPIADR,LPIAR

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E025 5203 LINE PRINTER FUNCTION TESTS

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ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
OF79 31 E6 127C       478 LIO LPDADR,LPDAR
OF7D 31 E0 0000       479 FRMLE LIO *-*,LOFOLG LOAD FORMS LENGTH
OF81 38 80 0204       480 TBN SBYTE1,SSWOB PRINT ON RIGHT CARR.
OF85 F2 90 04         481 JF NOTRIT JUMP IF NOT
OF88 34 08 0FB9       482 SBN CMND+1,B*1000* SET MOD.BIT
OF8C 0C 01 163D OFBA 483 NOTRIT MVC ERT1(2),CMND+2
OF92 38 08 0FB9       484 TBN CMND+1,B*1000* THIS CMD.FOR RIGHT CARR.
OF96 F2 90 11         485 JF SKRICA SKIP TO SET LEFT CARR.
OF99 3C EC 1032       486 MVI CABY+1,RICABY SET TO CHECK RIGHT CARR.BUSY
OF9D 3C E8 1291       487 MVI SPACE0-1,X*E8* SET RIGHT CARR.SPACE 0
OFA1 0C 01 0FD3 128E 488 MVC LICDSA+5(2),STOAD PUT RIGHT CARR.CTR.IN COMPARE
OFA7 F2 87 3E         489 J CMND
OFAA 3C E4 1032       490 SKRICA MVI CABY+1,CABUSY SET TO CHECK LEFT CARR.BUSY
OFAE 3C E0 1291       491 MVI SPACE0-1,X*E0* SET LEFT CARR.SPACE 0
OFB2 0C 01 0FD3 1290 492 MVC LICDSA+5(2),STOPI PUT LEFT CARR.CTR.IN COMPARE
OFB8 F3 00 00         493 CMND SIO X*O*,X*O* COMMAND LOADED DURING EXECUTION
OFBB 0C 01 14A6 1486 494 MVC MAP(2),CHT17 PUT CHART NO. IN MSG.
OFC1 0D 01 0FBA 1292 495 CLC CMND+2(2),SPACE0 DO NOT CHECK FOR BUSY IF THIS WAS
OFC7 F2 81 35         496 JE ISBUSY SPACE WITH ZERO CONTRGL CODE
OFCA 30 E0 1635       497 SAS STATO,X*E0* GRAB THE LINE CTRS.
OFCE 0D 00 0FBA 0000 498 LICDSA CLC CMND+2(1),*- LINE CTR.SAME AS CMD.C.C.
OFD4 F2 81 28         499 JE ISBUSY
OFD7 C1 E6 0FFF       500 TIO ISBUSY,BUSY PRINTER SHOULD BE BUSY
OFDB 3A 01 1628       501 SBN TAGS,TAG7 SET 1ST LINE PRINT ONLY
OFDF 0C 00 11F7 OFFE 502 MVC HLTID(1),NOBALT PUT HLT ID IN MSG
OFE5 C0 87 11A5       503 B ASTERR GO PRINT STATUS
OFE9 C0 87 021A       504 B PRINT PRINT NOT BUSY MSG
OFED 81 OFED 505 DC XL1*81*
OFEE 1D OFEE 506 DC IL1*29*
OFFE 1440 OFFE 507 DC AL2(NOBUSY)
OFF1 C0 87 021A       508 B PRINT PRINT PRINTER MAP CHART NO.
OFF5 85 OFF5 509 DC XL1*85*
OFF6 0A OFF6 510 DC IL1*10*
OFF7 14A6 OFF7 511 DC AL2(MAP)
OFF9 C0 87 0222       512 B HALT *IF NOT, HALT ON ERROR
OFFD E016 OFFE 513 NOBALT DC XL2'E016* NOT BUSY HALT
OFFF 3D 02 0A03       514 ISBUSY CLI RNUM,X*02* IN ROUTINE 2
1003 C0 81 10C5       515 BE XIOEXT
1007 0C 02 162D 1270 516 MVC BUSUB(3),BUSCT
100D 0C 01 1055 1288 517 MVC DELAY+3(2),ADBBY PUT IN LOOP ADDR.
1013 3C 12 1081       518 MVI BUALT,X*12* SET BUFFER BUSY ID
1017 0C 07 1440 1473 519 MVC BUMSG(8),BUFF MOVE BUFFER MSG
101D C1 E2 104C       520 BUBY TIO BSYLP,PBBUSY PRINT BUFF BUSY
1021 0C 01 1055 128A 521 MVC DELAY+3(2),ADCABY PUT IN LOOP ADDR.
1027 3C 13 1081       522 MVI BUALT,X*13* SET CARR.HALT ID
1028 0C 07 1440 1463 523 MVC BUMSG(8),CARR MOVE CARR.MSG
1031 C1 00 104C       524 CABY TIO BSYLP,-* CARRIAGE BUSY
1035 0C 01 1055 128C 525 MVC DELAY+3(2),ADPIBY PUT IN LOOP ADDR.
1038 3C 14 1081       526 MVI BUALT,X*14* SET PRINTER BUSY HALT ID
103F 0C 07 144D 1468 527 MVC BUMSG(8),PRIN MOVE PRINTER BUSY MSG
1045 C1 E6 104C       528 PIBY TIO BSYLP,BUSY PRINTER BUSY
1049 F2 87 36         529 J CHRDY
104C 0F 02 162D 1267 530 BSYLP SLC BUSUB(3),CNE TRY FOR ABOUT 3 SECONDS TO
1052 C0 01 0000       531 DELAY BNZ *-* CLEAR BUSY
1056 C0 87 10DB       532 B STERR CHECK FOR STATUS ERROR
105A C0 87 108A       533 B SDEMF
105E 3A 01 1628       534 SBN TAGS,TAG7 SET PRINT 1ST LINES ONLY FLAGS
1062 0C 00 11F7 1081 535 MVC HLTID(1),BUALT PUT HLT ID IN MSG
1068 C0 87 11A9       536 B PSTERR GO PRINT STATUS OR 1ST LINES
106C C0 87 021A       537 B PRINT PRINT BUSY MSG
1070 81 1070 538 CC XL1*81*
1071 1B 1071 539 DC IL1*27*
1072 145B 1073 540 CC AL2(BUTOLO)
1074 C0 87 021A       541 B PRINT PRINT PRINTER MAP CHART NO.
1078 85 1078 542 DC XL1*85*
1079 0A 1079 543 DC IL1*10*
107A 14A6 1078 544 DC AL2(MAP)
107C C0 87 0222       545 B HALT BUSY HALT

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E025 5203 LINE PRINTER FUNCTION TESTS

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains test code for error 1080 (E000) through 1087 (0000) and 10D9 (0000) through 1156 (3D 04 163B). Includes instructions like BUALT DC XL2'E000', CHRDY TIG ARDYER,NRDY, etc.

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains test code for error 115A (F2 84 09) through 11A1 (C0 87 0000) and 11C5 (642) through 11C7 (643). Includes instructions like JH AD107, ALC STAIX(1),UNITIN, etc.

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test details for various printer components like DCHALT, PRINT, PUIDIN, etc.

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test details for various printer components like DEPP, KNALB, YBATS, etc.



E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test data for various error codes and locations.

E025 5203 LINE PRINTER FUNCTION TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test data and indicator status (e.g., INDICATORS, EB1 ERRORS, EB2 ERRORS).

E025 5203 LINE PRINTER FUNCTION TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

892
893
894 *
895 ***** SECTION E02 *****
896 * ROLT.1 - SENSE CMDS ANALYSIS TEST
897 * ROLT.2 - SENSE TIMING BIT TEST
898 *****
899 * NOTES -
900 * 1.SET SSW-05 BEFORE RUNNING THIS TEST.
901 * 2.SET SSW-13 IF NO ALTERNATE PRINTER.
902 * 3.SET C.E.SWITCH TO CVERRIDE IDLE CONTROL BEFORE RUNNING THIS TEST.
903 *****
904 TREP
905 ***** SECTION E02 *****
906 TREP
907 * ROLT.1 - SENSE CMDS ANALYSIS TEST.
908 TREP
909 * ROLT.2 - SENSE TIMING BIT TEST
910 TREP
911 *****
912 TREP
913 * NOTES -
914 TREP
915 * 1.SET SSW-05 BEFORE RUNNING THIS TEST.
916 TREP
917 * 2.SET SSW-3,4,13 IF NC ALTERNATE PRINTER.
918 TREP
919 * 3.SET C.E.SWITCH TO OVERRIDE IDLE CONTROL BEFORE RUNNING THIS TEST.
920 TREP
921 *****
FFFF 922 END

```

E025 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ADBUBY	A	002	1288	0718	C517
ADCABY	A	002	128A	0719	0521
ADFOLG	A	002	1286	0717	0443
ADPIBY	A	002	128C	0720	0525
AD107	A	006	1166	0617	0610 0614
AD119	A	006	1150	0615	C612
ALBAC	A	004	0AAA	0080	0073
ALCOP	A	003	0BF8	0202	0185
ALSCF	A	017	151F	0807	C090
ANBAD	A	004	0AFC	0109	0107
ANEB1	A	004	0D2C	0303	C301*
ANEB2	A	004	0D30	0304	C302*
ANERR	A	004	0AE2	0103	0064
ANYGUD	A	004	0B13	0115	C112
ARR	C	001	0008	0854	0401* 0402 0403* 0404 0405 0406* 0407 0421 0444* 0445 0446* 0447
ASTERR	A	004	11A5	0635	0503
AVID	A	004	0C49	0229	0225
AWDUN	A	004	118C	0625	0622
BADBIT	A	005	160D	0828	0341*
BAPRT	A	004	0CC6	0275	0273
BIBAD	A	005	0DAA	0341	0323
BOTALT	A	002	0E4D	0388	0383* 0384*
BRDUT	A	004	0ECO	0421	0474
BSEXIT	A	004	0EE4	043C	C421* 0426
BSYLP	A	006	104C	0530	0520 0524 0528
BTES	A	007	158F	0816	C193
BTSOFF	A	002	1631	C842	C291* 0303* 0304*
BTSGN	A	002	162F	0841	0297* 0298* 0313
BUALT	A	002	1081	0546	0518* 0522* 0526* 0535
BUBY	A	004	101D	0520	0718
BUFF	A	008	1473	0791	0519
BUMSC	A	009	144D	0787	0519* 0523* 0527*
BUNALT	A	002	0E30	0381	C376* 0377*
BUSCT	A	003	1270	0704	C516
BUSCTI	A	003	1273	0705	0422
BUSUB	A	003	162D	0840	0422* 0423* 0516* 0530*
BUSY	C	001	0CE6	0869	0425 0500 0528
BUTOLC	A	014	1458	0788	C540
CABUSY	C	001	00E4	0870	0490
CABY	A	004	1031	0524	C486* C490* 0719
CARK	A	008	1463	0785	0523
CHOFF	A	004	0D90	0331	0327
CHRDY	A	004	1082	0547	0529
CHT11	A	002	1480	0799	C682
CHT13	A	002	1482	0800	0204 0358
CHT16	A	002	1484	08C1	0559
CHT17	A	002	1486	08C2	0494
CLINK	A	004	0E6A	0396	0390 0392
CMND	A	003	0FB8	0493	C450* C451 C452 0465 0482* 0483 0484 0489 0495 0498
CMPLNT	A	002	1633	0843	C299* 0300* 0301 0302
COCOD	A	004	0D66	0320	0315* 0329*
CSSWQA	A	004	0F23	0457	0455
CVD	A	004	0E6F	0401	C625 0641
DABOT	A	006	1132	0604	0601
DADENC	A	002	1280	0713	C602
DECGAN	A	006	0EA9	0413	0416
DECONE	A	001	1284	0716	0378 0385 0415
DECZRC	A	001	1283	0715	0412
DELAY	A	004	1052	0531	C517* 0521* 0525*
DEPP	A	008	12E5	0746	0557
CIVID	A	004	1175	0620	C616 0618
DOEB1	A	004	0D56	0316	0330
DOENSE	A	004	0A4A	0053	C047
DOHALT	A	006	1238	0682	0672 0674 0676
DORP	A	006	0E1B	0377	0379

E025 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Lists various symbols and their cross-references.

E025 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Lists various symbols and their cross-references.

EQ25 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SENS0	A	002	129D	0731	C053*
SENS1	A	002	129F	0732	C054*
SENS2	A	002	12A1	0733	C055* C057*
SENS3	A	002	12A3	0734	C056* C058*
SENTAB	A	001	129C	0730	C060 0126
SFFE	A	002	127E	0712	C299
SKALT	A	003	0A2D	0042	C032
SKIBIT	A	004	0AD1	0093	C082 0085
SKIHD	A	004	0DD5	0353	C343
SKRICA	A	004	0FAA	0490	C485
SKRIG	A	004	11C0	0641	C639
SNIRP	A	006	0CE4	0288	C395
SNOTIT	A	004	0C59	0234	C230
SPACED	A	002	1292	0723	C487* 0491* 0495
SPUDT	A	003	0A0C	0020	C046 0385
SPUTA	A	003	0A0F	0021	C177
SSW05	C	001	0004	0885	C031 0179 0275
SSW08	C	001	0080	0886	C480
SSW11	C	001	0040	0888	C454
SSW12	C	001	0020	0889	C457
SSW13	C	001	0010	0890	C215 0367
STAIK	A	002	1638	0847	C599* 0600 0602 0606* 0607 0609 0611 0613 0615* 0617* 0619* 0620* 0621* 0623* 0626
STALT	A	006	0DE1	0358	C332
STATAB	A	001	1363	0761	C587
STATO	A	002	1635	0844	C497* 0721 0722
STAT2	A	002	1637	0845	C294* 0295 0296 0300
STAT6	A	002	1639	0846	C552 0584* C593 0554 0635* 0659 0671 0673 0675
STECK1	A	004	1102	0593	C591*
STECK2	A	004	1106	0594	C592*
STERR	A	004	10DB	0583	C469 0475 0532 0548 0567
STEXIT	A	004	11A1	0631	C583* C629*
STSA1	A	002	10DA	0582	C586* C630
STOAO	A	002	128E	0721	C488
STOM2	A	002	1290	0722	C492
SUBGAN	A	006	1179	0621	C624
SYNARA	A	004	0CA0	0254	C075
TABBIT	A	001	1620	0831	C318
TAGS	A	001	1628	0837	C062* 0065* 0072 0074 0109 0111* 0113* 0219 0310* 0331 0342 0344* 0501* 0534* 0585* 0558* 0665 0692*
TAG1	C	001	0040	0874	C074 0109 0113
TAG2	C	001	0020	0875	C065 0072
TAG3	C	001	0010	0876	C310 0331 0342 0344
TAG4	C	001	0008	0877	C111 0219
TAG6	C	001	0002	0878	C585 0598
TAG7	C	001	0001	0879	C501 0534 0665 0692
TBON	A	003	0D6D	0322	C311* 0317* 0320 0324 0324* 0333 0335* 0346
TENXT	A	004	0D62	0319	C325
TESER	A	004	125A	0692	C666
TEST	C	001	0212	0863	C049 0571
TFEL	A	005	147D	0793	C272 0637
THGIR	A	005	1478	0792	C394 0640
TIOCHK	A	004	0F50	0467	C458 0473
TIOCK	A	004	0F69	0474	C468
TITLE1	A	024	12C3	0743	C036
TITL2	A	022	12D9	0744	C286
TIVA	A	003	0CAA	0259	C218 0223 0228 0233 0253
TIXE	A	004	0EBC	0417	C407* 0414
TQBYT	A	006	0EB2	0415	C409*
TOLONG	A	004	0EDA	0427	C424
TRAM	A	004	0D4E	0314	C337
TWO	A	002	1269	0701	C068 0069 0403
TWYWUN	A	002	126D	0703	C619
TYBOT	A	006	0E91	0409	C404*
UCSFLG	C	001	0878	0859	C043
UNITIN	A	001	1277	0708	C615

EQ25 5203 LINE PRINTER FUNCTION TESTS

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
UNOSVN	A	001	1276	0707	C617
UNPACK	C	001	021E	0866	C130 0136 0142 0148 0154 0160 0166 0172 0657
UNSEC	A	002	1282	0714	C292
UVWXYZ	A	001	0A00	0005	
WCHEE	A	014	152D	0808	C080* C083*
WFRDM	A	004	0E17	0116	C067 C076
WICAR	A	002	0CEF	0290	C271* 0391 0393*
WT	A	006	0F32	0461	C453 C464
XIO	A	006	0EE8	0443	C289
XIOEXT	A	004	10C5	0565	C466 0515 0551 0553 0566
XR1	C	001	0001	0855	C059* C063 0068* 0070 0103 0106 0125* 0129 0134* 0135 0140* 0141 0146* 0147 0152* 0202 0313* 0316* 0322 0371 0448 0565* 0586 0587*
XR2	C	001	0002	0856	C060* 0053 0069* 0103 0106 0114 0126* 0127 0128 0153 0156* 0159 0164* 0165 0170* 0171 0176* 0318* 0319* 0341 0347 0449 0570*
YBATS	A	004	133E	0758	C660 0664
ZALT	A	004	0C15	0213	
ZERO	A	002	1263	0658	C061 0066
ZROTO	A	006	0EA3	0412	C410*

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

DATE 31OCT69 28NOV69 02MAR70 11MAY70 01NOV70 19NOV71 15FEB75  
 EC NO. 816529 816542 816631 816671 816764 818677 572250

PROG ID  
PAGE

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10

DATE 31OCT69 28NOV69 02MAR70 11MAY70 01NOV70 19NOV71 15FEB75  
 EC NO. 816529 816542 816631 816671 816764 818677 572250

PROG ID  
PAGE

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10A



E025 5203 LINE PRINTER FUNCTION TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+/ YKOH B%GN=DC	HO)LM6MCO5MCC2(I	H -+5IV.8@TE6)L	A44CC2(I.-" A0@G	R6M7S:(PC&< H4U_	"ED " \$E0250043
T+/&T ".CO)XRK=.	PO* E&< H4U_ H "	CL_#R5+I 4*GM&<	H4U_ & *HC)LM1)V	"5)R.&DA " &DA 2)P	V4@E N\$4E0250044
T+/J;'-0@4CN5>	"O>LS:DCA1> E&MC	S2)R 0* P8@L5@?C	3&DA " &DA " &DA " &<.	U8>/ 8' \$0&(105*-	CO)U "EH8EG250045
T+/KR6+XA1@PP6*X	N8@PR&CCB9<\$F1)V	"6*)G2+ L1*\$TE(L	A4XN " -0@4CR1*G	" :F?T2<PN&(XE8XP	T&<- "N3 E0250046
T+/LMO) T5= RK@	H64_ " &DCE5: R:CC	4@-G1@*G6@-~J5(-	R&<E-0?GE*"L1@CC	T5UCAQ<.11 .S@ N	,8@- "5/QE0250047
T+/M 1)N 6*PS6'S	R1MCCO)XR2*GG1M7	SPO?P6*PS8UCC2(I	"6*PS1:(, &<GNIDC	R1: .E84CHO) T0)	LE+H "11@E0250048
T+/NH1)PS1MCC5<L	S&<\$A2) E!F?B9+	"5_PL:DA 1+.X&<.	Y8@PS&<GR1MCI5MC	E6)XS1)PS1MCC5XL	EE+* "1ME0250049
T+/OE94CI5MCE6)V	"0*\$M5<GNIDA " &<	O1<N-9=) " &DA " 0*\$	D10CX94A " &<.Y8@P	SEDA " &DA " 1*.2CC<P	B@M " LTUE0250050
T+/P " &DA " 1*.2Q<P	B@MA " &<PX5@PC8@P	D&DA " &+~X&+~X&DA	" &DA " 9=) " 9=) " &DA	"0* T9~GL&DA " &DA	"9=* "CYE0250051
T+/P#&+~X&DA " &DA	"9=) "9=-S1)PS1MC	C5<LSE(\$K&E"XE5(\$	V1MJCJ9(LP1)XS1)P	S1MCC5XLE&<P2E=L	S2)M "N:4EC250052
T(1Q314A " &DA " &CC	CO)XRK@.184A " &(1	F&<PB&DC18UCFO*X	L2)PG*" \$5* 12@~	.....  .....	..... ;J&E0250053
***** SECTI	CN E02 *****	*****	*****	*****	..... E0250054
* ROUT.1 - SENSE	CMD5 ANALYSIS T	EST.	.....	.....	..... E0250055
* ROUT.2 - SENSE	TIMING BIT TEST	.....	.....	.....	..... E0250056
*****	*****	*****	*****	*****	..... E0250057
* NOTES -	.....	.....	.....	.....	..... E0250058
* 1.SET SSW-05	BEFORE RUNNING T	HIS TEST.	.....	.....	..... E0250059
* 2.SET SSW-3,4	,13 IF NO ALTERN	ATE PRINTER.	.....	.....	..... E0250060
* 3.SET C.E.SWI	TCH TO OVERRIDE	IDLE CONTROL BEF	ORE RUNNING THIS	TEST.	..... E0250061
*****	*****	*****	*****	*****	..... E0250062
E"***E7*=-DC"PH\$	=*7M&F  "   " C	" F? " ASC " R A	SO " C	.....	..... 16561208740 21475".YE0250063

LAST PAGE

E033 CHAIN CHARACTER COUNTER TEST

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
      OAOO          2 DECK 4
      OAOO          3 E03 START X'A00'
      OAOO          4 *****
      OAOO          5 *
      OAOO          6 * SYSTEM/3 52C3 CHAIN CHARACTER COUNTER TEST
      OAOO          7 *
      OAOO          8 *****
      OAOO          9 * SECTION 3 - ROUTINE 1
      OAOO          10 *****
      OAOO E033     OAO1 11 DC XL2'E033' PROGRAM IDENTIFICATION
      OAOO 00       OAO2 12 DC XL1'C' FLAGS
      OAOO 01       OAO3 13 DC XL1'1' CURRENT ROUTINE NUMBER
      OAOO 0000     OAO5 14 DC XL2'0' RESERVED
      OAOO 0A0D     OAO7 15 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX
      OAOO 0DC4     OAO9 16 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE
      OAOO EC5000   OAOO 17 SPUDT DC XL3'E05000' UNIT DEFINITION TABLE - PRINTER
      OAOO          18 *****
      OAOO          19 *
      OAOO          20 * ROUTINE 1 - CHAIN CHARACTER COUNTER TEST
      OAOO          21 *
      OAOO          22 *****
      OAOO 01       OAOO 23 RTN1 DC XL1'1' ROUTINE NUMBER
      OAOO 00       OAOE 24 DC XL1'0' FLAGS
      OAOO FFFF     OAO10 25 DC XL2'FFFF' LAST ROUTINE
      OAOO          26 *****
      OAOO          27 B TEST
      OAOO          28 MVI TECHBI,X'38' SET TO CHK.48 CHAR.BIT ON
      OAOO          29 MVC WHAIN(3),FRATE PUT 48 IN TITLE
      OAOO          30 MVI HICHT,X'2F' SET HIGH CHAR COUNT FOR 48 CHAR
      OAOO          31 CLI UCSFLG,X'FF' UCS FLAG ON
      OAOO          32 JNE SENAT
      OAOO          33 MVI TECHBI,X'39' SET TO CHK. 48 CHAR.BIT OFF
      OAOO          34 MVI HICHT,X'77' SET HIGH CHAR COUNT FOR ECS
      OAOO          35 MVC WHAIN(3),EXCASE PUT 120 IN TITLE
      OAOO          36 SENAT SNS STAT3,X'E3' GRAB STATUS
      OAOO          37 TECHBI TBN STAT3,B'100' 48 CHAR. BIT ON OR OFF
      OAOO          38 JT GOPRT
      OAOO          39 TBN SBYTEO,SSW05 PRINT ON MFCU
      OAOO          40 JF UDALT
      OAOO          41 B PRINT PRINT 'IMAGE AND CHAIN DO NOT AGREE'
      OAOO          42 DC XL1'C1'
      OAOO          43 DC IL1'28'
      OAOO          44 DC AL2(ERUDT)
      OAOO          45 DC XL2'E00E'
      OAOO          46 UDALT B HALT UDT ERR HALT
      OAOO          47 DC XL2'E00E'
      OAOO          48 GOPRT TBN SBYTEO,SSW05 PRINT ON MFCU
      OAOO          49 JF TIPMU
      OAOO          50 B PRINT PRINT 'XXX CHARACTER CHAIN CHARACTER
      OAOO          51 DC XL1'41' COUNTER TEST'
      OAOO          52 DC IL1'28'
      OAOO          53 DC AL2(TITL1)
      OAOO          54 DC XL2'E000'
      OAOO          55 TIPMU TBN SPUDT,B'100000' 100-200 LPM DEVICE
      OAOO          56 JF JUMPIT
      OAOO          57 MVI THRTEN,X'CA'
      OAOO          58 MVI YABIT+1,X'0A'
      OAOO          59 MVC HICNT+5(2),ADMAX
      OAOO          60 MVC LOCNT+5(2),ADMIN
      OAOO          61 *****
      OAOO          62 * TAKE 1550 SAMPLES OF CHAIN EMITTER TIMING
      OAOO          63 *****
      OAOO          64 JUMPIT MVI LPDUNT,X'00' START LOOP COUNT AT 0
      OAOO          65 MVC ENTUU(2),GCF
      OAOO          66 LUGAN MVI BLAKNT,30 SET WIPE COUNT
      OAOO          67 LA SEMID,XR1 END OF AREA ADDR.
      OAOO          68 MVC O(50,XR1),ENTUU-1 WIPE 1ST 50
      OAOO          69 MOVVMOR A MIFTY,XR1 DECR.ADDR. BY 50

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E033 CHAIN CHARACTER COUNTER TEST

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
      OAA1 5C 31 00 32 70 MVC O(50,XR1),50(X,XP1) WIPE 50 MORE
      OAA5 0F 00 0DC7 0D4F 71 SLC BLAKNT(1),ONE 1550 BYTES DONE?
      OAA8 00 01 0A9D 72 BNZ MCVVMOR
      OAAF 00 87 0D24 73 B BROUT
      OAB3 02 02 19F0 74 LA TWCIN,XR2 LOAD SAMPLE AREA ADDR.
      OAB7 00 E2 01 75 TAKSAN SNS 1(XR2),X'E2' 5 SENSE TIMING BYTES
      OABA E2 02 01 76 LA 1(XR2),XR2 3 ADD 1 TO SAMPLE AREA ADDR.
      OABD 0D FF 01 77 CLI 1(XR2),X'FF' 4 END OF SAMPLE AREA
      OACO 00 01 0AB7 78 BNE TAKSAN 4 IF NOT, LOOP
      OACO          79 * 16 =24.3 USEC.LCOP
      OAC4 BC 00 00 80 MVI O(XR2),X'00' ZERO 2ND SENSE BYTE
      OAC4          81 *****
      OAC4          82 * CHECK FOR NO EMITTER PULSES
      OAC4          83 *****
      OAC7 3C 88 0AD6 84 MVI CHECN,X'B8'
      OACB 02 02 19F0 85 LA TWCIN,XR2 LOAD TIMING AREA ADDR.
      OACF 3C 28 0DC9 86 PAZZ MVI NOEM,X'28' LOAD TRY COUNT CF 40
      OAD3 E2 02 01 87 CHKNE LA 1(XR2),XR2 ADD 1 TO ADDR<
      OAD6 B8 20 30 88 CHECN TBN O(XR2),B'100000' CHAIN EMITTER ON
      OAD9 F2 10 14 89 JT ANYMIS
      OADC 0F 00 0DC9 0D4F 90 SLC NOEM(1),ONE TRY 40 SAMPLES
      OAE2 00 01 0AD3 91 BNZ CHKNE
      OAE6 00 87 0222 92 B HALT HALT NO EMITTER PULSES
      OAEA E051 OAE8 93 DC XL2'E051'
      OAEC 00 87 0D0E 94 B GAWAN
      OAF0 3D 89 0AD6 95 ANYMIS CLI CHECN,X'B9' TEST FOR BIT OFF BEEN DONE
      OAF4 F2 81 08 96 JE SIMYNA
      OAF7 3C 89 0AD6 97 MVI CHECN,X'B9' CHANGE TO CHECK FOR BIT OFF
      OAFB 00 87 0ACF 98 P PAZZ
      OAFB          99 *****
      OAFB          100 * CHECK FOR MISSED EMITTERS
      OAFB          101 *****
      OAFB          102 SIMYNA LA TWCIN,XR2 LOAD TIMING AREA ADDR.
      OBO3 3C 11 0DC9 103 YABIT MVI NCEM,17 LOAD TRY COUNT CF 17 OR 10
      OBO7 E2 02 01 104 NOBIT LA 1(XR2),XR2 ADD 1 TO ADDR.
      OBOA B8 20 00 105 TBN O(XR2),B'100000' CHAIN EMITTER ON
      OB0D F2 10 18 106 JT GOODUN
      OB10 0F 00 0DC9 0D4F 107 SLC NCEM(1),ONE TRY 17 OR 10 SAMPLES
      OB16 00 81 0B21 108 BZ MISEM
      OB1A 02 01 0B07 109 LA NOBIT,XR1 LOAD LOOP ADDR.
      OB1E F2 87 0E 110 J CHEND
      OB21 00 87 0222 111 MISEM B HALT HALT, MISSED AN EMITTER PULSE
      OB25 E052 OBE6 112 DC XL2'E052'
      OB27 00 87 0D0E 113 B GAWAN
      OB2B 02 01 0B03 114 GOODUN LA YABIT,XR1 LOAD LOOP ADDR.
      OB2F 34 02 0DBE 115 CHEND ST ADRSAV,XR2
      OB33 00 01 0DBE 0D64 116 CLC ADRSAV(2),LASADR ENTIRE FIELD CHECKED
      OB39 00 01 00 117 BNE O(XR1)
      OB39          118 *****
      OB39          119 * SENSE 1550 SAMPLES OF TIMING AND CHAR.COUNTER
      OB39          120 *****
      OB3C 35 02 0D6E 121 L HODEL,XR2 LOAD 350 MS SEARCH
      OB40 36 02 0D68 122 HMCOP A NEG1,XR2 DECREMENT DELAY
      OB44 00 81 0B81 123 BZ EMJN
      OB48 30 E2 0DC0 124 SNS STAT2,X'E2' GRAB TIMING
      OB4C 38 01 0DBF 125 TBN STAT2-1,B'1' HOME LATCH ON
      OB50 00 90 0B40 126 BF HMOOP
      OB54 3C 96 0DCD 127 MVI MSECS,150 SET 150 MS DELAY
      OB58 3C 01 0BA0 128 MVI SHLONG+1,X'01'
      OB5C 38 20 0A0C 129 TBN SPUDT,B'100000' 100-200 LPM ?
      OB60 F2 10 08 130 JT NOUCS
      OB63 3C FF 0DCD 131 MVI MSECS,255
      OB67 3C 07 0BA0 132 MVI SHLONG+1,X'07'
      OB68 0D FF 0800 0800 133 NOUCS CLC LPI(256),LPI DELAY 1 MS.
      OB71 0D 38 0800 0800 134 CLC LPI(60),LPI
      OB77 0F 00 0DCD 0D4F 135 SLC MSECS(1),ONE DECR DELAY COUNT
      OB7D 00 84 0B68 136 BH NOUCS
      OB81 02 02 19F0 137 EMCN LA TWCIN,XR2 LOAD TIMING AREA ADDR.

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E033 CHAIN CHARACTER COUNTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for E033 CHAIN CHARACTER COUNTER TEST, including instructions like LA, MVC, ST, CLC, etc.

E033 CHAIN CHARACTER COUNTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for E033 CHAIN CHARACTER COUNTER TEST, including instructions like JNH, CLC, JNE, etc.



E033 CHAIN CHARACTER COUNTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0D4E	0001	0D4F	274	ONE DC	IL2'1'
0D50	0002	0D51	275	TWO DC	IL2'2'
0D52	0C04	0D53	276	FOUR DC	IL2'4'
0D54	000D	0D55	277	THRTEEN DC	IL2'13'
0D56	025F	0D57	278	FEMIN DC	IL2'607'
0D58	026D	0D59	279	FEMAX DC	IL2'621'
0D5A	040000	0D5C	280	BUSCTI DC	XL3'040000'
0D5D	0C0000000000	0D62	281	DC	XL6'0'
0D63	1FFE	0D64	282	LASADR DC	AL2(8190)
0D65	1FFD	0D66	283	ALMLAS DC	AL2(818C)
0D67	FFFE	0D68	284	NEG1 DC	XL2'FFFE'
0D69	00FF	0D6A	285	00F DC	XL2'00FF'
0D6B	FFCE	0D6C	286	MIFTY DC	IL2'-50'
0D6D	3A00	0D6E	287	HODEL DC	XL2'3A00'
0D6F	0D74	0D70	288	ADMIN DC	AL2(FEMINN)
0D71	0D76	0D72	289	ADMAX DC	AL2(FEMAXX)
0D73	01DB	0D74	290	FEMINN DC	IL2'475'
0D75	01E4	0D76	291	FEMAXX DC	IL2'484'
		292			
		293			*****
		294			* PRINTOUTS *
		295			*****
0D77	40F4F8	0D79	296	FRATE DC	CL3' 48'
0D7A	F1F2F0	0D7C	297	EXCASE DC	CL3'120'
0D7D	4C4040	0D7F	298	WHAIN DC	CL3' '
0D80	40C3C8C1D94BC3C8	0D93	299	DC	CL20' CHAR.CHAIN,CHAR.CTR'
0D88	C1C9D56BC3C8C1D9		299		
0D90	4BC3E3D9		299		
0D94	4BE3C5E2E3	0D98	300	TITL1 DC	CL5'.TEST'
0D99	C9D4C1C7C540C1D5	0DA8	301	DC	CL16'IMAGE AND CHAIN '
0DA1	C440C3C8C1C9D540		301		
0DA9	C4D640D5D6E340C1	0DB4	302	ERUDT DC	CL12'DC NOT AGREE'
0DB1	C7D9C5C5		302		
		303			
		304			*****
		305			* RESERVED STORAGE *
		306			*****
0DB5	0000	0DB6	307	SAMCNT DC	XL2'0'
0DB7	0C0000000000	0DB8	308	DC	XL6'0'
0DBD		0DBE	309	ADRS AV DS	CL2
0DBF		0DC0	310	STAT2 DS	CL2
0DC1		0DC2	311	STAT3 DS	CL2
0DC3		0DC4	312	ERT1 DS	CL2
0DC5		0DC6	313	SAVSAM DS	CL2
0DC7		0DC7	314	BLAKNT DS	CL1
0DC8		0DC8	315	LPQUNT DS	CL1
0DC9		0DC9	316	NOEM DS	CL1
0DCA		0DCA	317	TRICT DS	CL1
0DCB		0DCB	318	HICHCT DS	CL1
0DCC		0DCD	319	MSECS DS	CL2
0DCE		0DD0	320	BUSUB DS	CL3
13E0		321		ORG	X'13EC'
		322		ONEIN EQU *	
13E0		19ED	323	DS	31CL50
19EE		19EF	324	DS	CL2
		19F0	325	TWOIN EQU *	
19F0		1FFD	326	SEMID DS	31CL50
1FFE		1FFF	327	ENTUU DS	CL2
		328			*****
		329			* EQUATES *
		330			*****
0001	331	XR1	EQU	1	INDEX REGISTER 1
0002	332	XR2	EQU	2	INDEX REGISTER 2
0800	333	LPI	EQU	X'800'	LINE PRINTER IMAGE AREA
0878	334	UCSFLG	EQU	X'878'	
0216	335	LINK	EQU	X'216'	ENTRY TO DCP CHAIN ROUTINE
0212	336	TEST	EQU	X'212'	ENTRY TO DCP READ DATA SW'S ROUT.
021A	337	PRINT	EQU	X'21A'	ENTRY TO DCP PRINT ROUTINE

E033 CHAIN CHARACTER COUNTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
00E6	338	BUSY	EQU	X'E6'	PRINTER BUSY CODE
0008	339	ARR	EQU	X'8'	ADDR.RECALL REG.
0222	340	HALT	EQU	X'222'	ENTRY TO DCP ERROR HALT ROUTINE
	341	*			SENSE SWITCH EQUATES
0208	342	SBYTE0	EQU	X'208'	DCP SENSE SWITCH AREA
	343	*			CONTROL PGM SENSE SWITCHES
0004	344	SSW05	EQU	X'04'	PRINT MESSAGES CN MFCU
FFFF	345		END		

E033 CHAIN CHARACTER COUNTER TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ADMAX	A	002	0D72	0289	0059
ADMIN	A	002	0D70	0288	0060
ADRSVA	A	002	0DBE	0309	0115* 0116 0144* 0145 0191* 0192
ADWUN	A	003	0BBD	0156	0167
ALMLAS	A	002	0D66	0283	0192
ALRSVD	A	004	0C3A	0190	0188
ANYMIS	A	004	0AFC	0095	0089
ARR	C	001	0008	0339	0260
BACTR	A	004	0D08	0249	0230 0240 0242
BLAKNT	A	001	0DC7	0314	0066* 0071*
BROUT	A	004	0D24	0260	0073
BSEXIT	A	004	0D48	0269	0260* 0265
BUSCTI	A	003	0D5C	0280	0261
BUSUB	A	003	0DD0	0320	0261* 0262*
BUSY	C	001	00E6	0338	0264
CEND	A	004	0C3E	0191	0168
CHEND	A	004	0B2F	0115	0110
CHEON	A	003	0AD6	0088	0084* 0095 0097*
CHKNE	A	003	0AD3	0087	0091
EMON	A	004	0B81	0137	0123
ENTUU	A	002	1FFF	0327	0065* 0068 0149*
ERT1	A	002	0DC4	0312	0016
ERUDT	A	012	0DB4	0302	0044
EXCASE	A	003	0D7C	0297	0035
E03	A	001	0A00	0003	
FEMAX	A	002	0C59	0279	0160
FEMAXX	A	002	0D76	0291	0289
FEMIN	A	002	0D57	0278	0178
FEMINN	A	002	0D74	0290	0288
FLOOP	A	006	0D2E	0262	0264
FOUR	A	002	0D53	0276	0233
FRATE	A	003	0D79	0236	0029
GAWAN	A	006	0D0E	0251	0094 0113 0166 0186 0204 0217 0220 0228 0248
GOODUN	A	004	0B2B	0114	0106
GDPRT	A	004	0A5A	0048	0038
GOTWUN	A	006	0BED	0172	0158
GUUDY	A	004	0CF1	0243	0237
HALT	C	001	0222	0340	0046 0092 0111 0164 0184 0215 0218 0226 0246 0249 0266
HICHT	A	001	0DCB	0318	0030* 0034* 0203 0205 0229
HICNT	A	006	0BCC	0160	0059*
HMOOP	A	004	0B40	0122	0126
MODEL	A	002	0D6E	0287	0121
MOSAM3	A	005	0C69	0205	0202
ISSEQ	A	004	0C9B	0221	0206 0208
JUMPI	A	004	0A86	0064	0056
LASADR	A	002	0D64	0282	0116 0145
LINK	C	001	0216	0335	0255
LOADUN	A	004	0BE6	0167	0161 0163 0183
LOCNT	A	006	0C06	0178	0060* 0174
LOLPAD	A	006	0C2B	0187	0179
LPI	C	001	0800	0333	0133 0133 0134 0134
LPCUNT	A	001	0DC8	0315	0064* 0251* 0253
LUGAN	A	004	0A9C	0066	0254
MIFTY	A	002	0D6C	0286	0069
MISEM	A	004	0B21	0111	0108
MOVOCR	A	004	0A9D	0069	0072
MSECS	A	002	0DCD	0319	0127* 0131* 0135*
NEG1	A	002	0D68	0284	0122
NOBIT	A	003	0B07	0104	0109
NOEM	A	001	0DC9	0316	0086* 0090* 0103* 0107* 0231* 0241*
NOSEQ	A	005	0C88	0229	0225
NOSHFT	A	004	0C92	0218	0210 0212 0214
NOUCS	A	006	0B6B	0133	0130 0136
ONE	A	002	0D4F	0274	0071 0090 0107 0135 0142 0143 0159 0172 0223 0235 0238 0241
					0244 0251 0262
CNEIN	A	001	13EC	0322	0138 0197 0221

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CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
DOF	A	002	0D6A	0285	0065
PAZZ	A	004	0ACF	0086	0098
PLOOP	A	004	0CCC	0234	0245
PRINT	C	001	021A	0337	0041 0050
RTN1	A	001	0A0D	0023	0015
SAMCNT	A	002	0D66	0307	0155* 0159* 0160 0172* 0178 0182 0189
SAVIT	A	006	0C34	0189	0177 0181
SAVSAM	A	002	0DC6	0313	0154* 0175 0180 0187 0189* 0198 0200 0222
SBYTEO	C	001	0208	0342	0039 0048
SDC	A	006	0D28	0261	0268
SEMID	A	050	1FFD	0326	0067
SENAT	A	004	0A38	0036	0032
SHLONG	A	006	0B9F	0145	0128* 0132*
SIMYNA	A	004	0AFF	0102	0096
SLOOP	A	003	0B89	0139	0146
SPUDT	A	003	0ACC	0017	0055 0129
SSW05	C	001	0004	0344	0039 0048
STAT2	A	002	0DC0	0310	0124* 0125
STAT3	A	002	0DC2	0311	0036* 0037
TAKSAN	A	003	0AB7	0075	0078
TECHBI	A	004	0A3C	0037	0028* 0033*
TEST	C	001	0212	0336	0027 0252
THRTEA	A	002	0D55	0277	0057* 0234 0243
TIPMU	A	004	0A6B	0055	0049
TITL1	A	005	0D98	0300	0053
TOLCNG	A	004	0C3E	0266	0263
TOME	A	006	0C18	0182	0176
TRICT	A	001	0DCA	0317	0232* 0244*
TWO	A	002	0D51	0275	0182
TWOIN	A	001	19F0	0325	0074 0085 0102 0137 0153 0199
UCSFLG	C	001	0878	0334	0031 0162 0173
UDALT	A	004	0A54	0046	0040
WHAIN	A	003	0D7F	0298	0029* 0035*
XR1	C	001	0001	0331	0067* 0068 0069* 0070 0070 0109* 0114* 0117 0138* 0140 0141 0141 0142* 0167* 0190* 0193 0197* 0198* 0201 0203 0205 0207 0224 0229 0235 0236 0238 0239 0243*
XR2	C	001	0002	0332	0074* 0075 0076 0076* 0077 0080 0085* 0087 0087* 0088 0102* 0104 0104* 0105 0115 0121* 0122* 0137* 0139 0143* 0144 0153* 0156 0156* 0157 0191 0199* 0200* 0209 0211 0213 0221* 0222* 0223 0224 0233* 0234* 0236 0239 0058* 0114
YABIT	A	004	0B03	0103	0058* 0114
ZERO	A	002	0D40	0273	0154 0155 0175 0180 0187
ZERSAM	A	006	0BB7	0155	0190

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

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LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

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ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
2 *                               LAST CHG 19MAY76
3   TREP
4   DECK 4
5   SEQ 0
6 *   COM           THIS PREVENTS GENERATION OF OBJECT DECK
7 LDS   START X'0'
8 *****
9 *   BOOTSTRAP - FIRST RECORD
10 *****
11 *****
12 *   LOADER FOR 3741
13 *   THIS PROGRAM IS CONTAINED IN THE FIRST RECORD ON THE DISKETTE
14 *   USED TO LOAD THE 3277 MICROCODE. IT IS READ INTO CORE STARTING
15 *   AT LOCATION 0000 BY INITIAL PROGRAM LOAD. THE BOOTSTRAP ROUTINE
16 *   READS THE NEXT TWO RECORDS INTO CORE STARTING AT LOCATION 512 AND
17 *   BRANCHES TO THIS NEXT ROUTINE.
18 *
19 *****
0000 0000 20   USING BOOTS,XR1
0000 C2 01 0000 21   USING BOOTS,XR2
0004 C2 02 0100 22   BOOTS LA 0,XR1          LOAD BASE REGISTER
0008 F3 43 08   23   LA 256,XR2          LOAD BASE REGISTER
0008 71 41 58   24   BOOT1 SIO X'08',X'43'   NORMAL RESPONSE TO 3741
000E 70 43 56   25   LIO FUNBT1(,XR1),X'41'   LOAD FUNCTION REGISTER
0011 78 04 55   26   BOOT1A SNS SNBYT1(,XR1),X'43'   SENSE I/O TRANSFERR LINES
0014 D0 90 4B   27   TBN SNBYT1-1(,XR1),X'04'   TEST FOR ON-LINE BIT ON
0017 78 02 55   28   BF BOOTIE(,XR1)          GO GIVE AN H5 HALT
001A D0 90 0E   29   TBN SNBYT1-1(,XR1),X'02'   TEST FOR READ BIT ON
001D F3 43 08   30   BF BOOT1A(,XR1)         LOOP UNTIL READ BIT IS ON
0020 71 44 52   31   SIO X'08',X'43'        NORMAL RESPONSE TO 3741
0023 71 42 54   32   LIO BOOT11(,XR1),X'44'   PUT READ ADDRESS IN DSAR
0026 F3 41 00   33   LIO LENTCT1(,XR1),X'42'   PUT 255-LENGTH IN LC REGISTER
0029 D1 42 29   34   SIO 0,X'41'          READ THE NEXT RECORD
002C F3 43 08   35   TIO *(,XR1),X'42'     TEST UNTIL 3741 NOT BUSY
002F 70 42 56   36   SIO X'08',X'43'        NORMAL RESPONSE TO 3741
0032 79 0A 55   37   SNS SNBYT1(,XR1),X'42'   GET THE STATUS BYTE
0035 D0 90 4B   38   TBF SNBYT1-1(,XR1),X'0A'   PARITY READ ERROR OR LCR OVFL CHECK
0038 8C 75 75 0275 39   BF BOOTIE(,XR1)        GO TO THE ERROR HALT
003D E2 02 76   40   MVC 117(118,XR2),629    PUT DATA INTO CORE
0040 5F 00 05 01 41   LA 118(,XR2),XR2      INCREMENT POINTER FOR NEXT RECORD
0044 D0 01 0E   42   SLC BOOTS+5(,XR1),BOOTS+1(,XR1) DECREMENT RECORD COUNT
0047 C0 87 0159 43   BNZ BOOT1A(,XR1)     CONTINUE WITH A SECOND RECORD
44   B NEXTC           GO TO DIAGNOSTIC LOADER.
45
004B F0 3B 5D   46   BOOT1E HPL H5,HH      3741 NOT READY OR ERROR
004E D0 87 08   47   B BOOT1(,XR1)      GO TRY AGAIN
48
0051 0200   0052 49   BOOT11 DC AL2(512)
0053 007F   0054 50   LENTCT1 DC XL2'007F'
0055 0000   0056 51   SNBYT1 DC XL2'0'
0057 4000   0058 52   FUNBT1 DC XL2'4000'
53
0059 40D7D540F5F1F3F2 0075 54   DC CL29' PN 5132774 EC 571874 X' REH)
0061 F7F7F44040C5C340 54
0069 F5F7F1F8F7F44040 54
0071 40404040E7 54
55 *   ACTUAL VALUES ARE IN ACTUAL CARD.
56
0100 57   DRG 256
58 *****
59 *   MICRO CODE LOADER
60 *****
61 *****
62 *
63 *   THIS LOADER IS ENTERED INTO CORE AND BRANCHED TO BY THE PRECEDING
64 *   BOOTSTRAP LOADER. THIS LOADER LOADS THE ACTUAL MICRO CODE LOADER
65 *   AND BRANCHES TO IT TO BEGIN LOADING THE MICRO CODE. THE SUBROUTINE
66 *   TO READ RECORDS FROM THE DISKETTE WHICH IS WITHIN THIS LOADER IS

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ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
67 *   USED BY THE MICRO CODE LOADER TO READ THE DISKETTE RECORDS.
68 *
69 *****
70
71 *
72 ** SUBROUTINE TO READ ONE CARD.
73 *
00FC 74   USING CREAD-4,XR2
75 CREAD LA CREAD-4,XR2   LOAD BASE ADDRESS
76   LA INPUT,XR1       SET
0107 77   AINPUT EQU *-1
78   ST CDEXIT+3(,XR2),ARR   SET UP RETURN ADDRESS
79 DOSIO SNS SNBYT2(,XR2),X'43'   SENSE I/O TRANSFERR LINES
80   TBN SNBYT2-1(,XR2),X'04'   TEST FOR ON-LINE BIT ON
81   BF ERR(,XR2)          GO GIVE AN H5 HALT
82   TBN SNBYT2-1(,XR2),X'02'   TEST FOR READ BIT ON
83   BF DOSIO(,XR2)       LOOP UNTIL READ BIT IS ON
84   SIO X'08',X'43'     NORMAL RESPONSE TO 3741
85   LIO AINPUT(,XR2),X'44'   PUT READ ADDRESS IN DSAR
86   LIO LENTCT2(,XR2),X'42'   PUT 255-LENGTH IN LC REGISTER
87   SIO 0,X'41'        READ THE NEXT RECORD
88   TIO *(,XR2),X'42'     TEST UNTIL 3741 NOT BUSY
89   SNS SNBYT2(,XR2),X'42'   GET THE STATUS BYTE
90   TBF SNBYT2-1(,XR2),X'0A'   PARITY READ ERROR OR LCR OVFL CHECK
91   JF ERR             GO HALT IF EITHER CONDITION EXISTS
92   SIO X'08',X'43'     NORMAL RESPONSE TO 3741
93 EOJCHK SNS SNBYT2(,XR2),X'43'   SENSE I/O TRANSFERR LINES
94   TBN SNBYT2-1(,XR2),X'02'   CHECK FOR READ BIT ON
95   JT CDEXIT         GO ON IF MORE TO BE READ
96   TBN SNBYT2(,XR2),X'08'   CHECK FOR END OF JOB
97   BF EOJCHK(,XR2)    KEEP ON CHECKING
98   SIO X'08',X'43'     NORMAL RESPONSE TO 3741
99 CDEXIT B   **-*
100
101 ERR HPL H5,HH      **3741 NOT READY OR ERROR
102   B DOSIO(,XR2)    GO TRY START I/O
103
0152 104 LENTCT2 DC XL2'007F'
0154 105 SNBYT2 DC XL2'0'
0156 106 N1 DC XL2'0001'
0158 107 NEG4 DC XL2'FFFC'
108
109 NEXTC MVI X'8FF',C'   CLEAR PRINT FIELD
110   MVC X'8FE'(255),X'8FF'
111
112 NEXTR B CREAD      GO READ A CARD
113   CLI 0(,XR1),C'E'   IF THIS IS END CARD, GO ON
114   JE CKREP          (LOADER-CHG) CKREP
115
116   MVC MOVE+3(3,XR2),03(,XR1) SET UP TO MOVE TEXT DATA TO CORE
117 LPTONE MVC MOVE+4(1,XR2),01(,XR1)
118   LA 04(,XR1),XR1
119 MOVE MVC **-*(*-*)**,*-*(,XR1) INSTRUCTION TO MOVE TEXT DATA
120   B NEXTR          CONTINUE LOADING, GET NEXT RECORD
121 CKREP B X'200'
122 *   ECOM          BEGIN GENERATING TEXT CARDS

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LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
01FC		124 *		ORG X'01FC'
01FC 0100	01FD	125	ORG	X'01FC'
		126	LDADDR DC	AL2(CDREAD) PICK UP ADDRESS OF READ SUBROUTINE
		127 *		
0200		128	ORG	X'0200'
		129	*****	*****
		130 *		
		131 *		3340 MICROCODE LOADER
		132 *		
		133	*****	*****
		134 *		
0200 C2 01 1000		135	LOADER LA	UCODE,XR1 POINT TO MICROCODE STG AREA
		136 *		
0204 7C 80 00		137	CLRSTG MVI	O(,XR1),X'80' FLAG ALL
0207 D2 01 03		138	LA	3(,XR1),XR1 UN SED CONTROL
020A 34 01 0940		139	ST	WORKN,XR1 STORAGE AREAS
020E 38 40 093F		140	TBN	WORKN-1,BIT1 AS DATA AREAS
0212 C0 90 0204		141	BF	CLRSTG
		142 *		
		143 *		
		144 *		READ ONE MICROCODE RECORD
		145 *		
0216 35 01 01FD		146	READER L	LDADDR,XR1 SETUP LINKAGE
021A 34 01 0225		147	ST	READ1+3,XR1 TO CARD READ
021E 34 01 023F		148	ST	READ+3,XR1 SUBROUTINE
		149 *		
0222 C0 87 0000		150	READ1 B	*-* RD FIRST CARD OF SECTION FAO
		151 *		
0226 0C 03 0933 08DF		152	MVC	SEQ(4),INPUT+95 INITIALIZE CARD
022C 3D E7 0880		153	CLI	INPUT,C'X' SEQUENCE CHECK AND
0230 F2 01 0D		154	JNE	CKCARD BRANCH IF 96 COLUMN CARD
		155 *		
0233 0C 03 0933 08CF		156	MVC	SEQ(4),INPUT+79 INITIALIZE CARD SEQUENCE
0239 F2 87 04		157	J	CKCARD CHECK FROM 80 COL COMPRESSED CD
		158 *		
023C C0 87 0000		159	READ B	*-* RD NEXT CARD OF SECTION FAO
		160 *		
0240 C2 01 0880		161	CKCARD LA	INPUT,XR1 POINT TO CARD READ IN AREA
		162 *		
0244 7D E7 00		163	CLI	O(,XR1),C'X' BRANCH IF NOT
0247 F2 01 04		164	JNE	CKID 80 COLUMN COMPRESSED FORMAT
		165 *		
024A 5C 07 5F 4F		166	MVC	95(8,XR1),79(,XR1) POSITION ID AND SEQ FOR CHECKING
		167 *		
024E 4D 02 5A 092F		168	CKID CLC	90(3,XR1),FAOID BRANCH IF
0253 F2 01 23		169	JNE	IDERR WRONG SECTION ID
		170 *		
0256 3A 80 092C		171	SBN	IND,SEQCK INITIATE CARD SEQUENCE CHECKING
		172 *		
025A 4D 03 5F 0933		173	CLC	95(4,XR1),SEQ BRANCH IF
025F F2 01 26		174	JNE	SEQERR INCORRECT CARD SEQUENCE
		175 *		
0262 06 30 0933 0912		176	AZ	SEQ(4),DI(1) INCREMENT SEQUENCE CHECK NUMBER
		177 *		
0268 7D E7 00		178	CLI	O(,XR1),C'X' BRANCH IF COMPRESSED
026B C0 81 02C4		179	BE	CKTYPE FORMAT MICROCODE OBJECT CARD
		180 *		
026F 7D D4 00		181	CLI	O(,XR1),C'M' BRANCH IF 96 COLUMN
0272 F2 81 1A		182	JE	CMPRS MICROCODE OBJECT CARD
		183 *		
0275 C0 87 023C		184	B	READ GO TO READ ANOTHER CARD
		185 *		
0279 F0 6F 03		186	IDERR HPL	H1,H0 *** HALT 01 ***
		187 *		
027C 38 80 092C		188	TBN	IND,SEQCK BRANCH IF SEQUENCE CHECKING
0280 C0 90 0222		189	BF	READ1 HAS NOT YET BEEN INITIATED
		190 *		
0284 C0 87 023C		191	B	READ GO TO READ ANOTHER CARD

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0288 F0 6F 76		192 *		SEQERR HPL H2,H0 *** HALT 02 ***
		193	SEQERR HPL	H2,H0
		194 *		
0288 C0 87 023C		195	B	READ GO TO READ ANOTHER CARD
		196 *		
		197 *		
		198 *		COMPRESS ONE MICRO-CODE RECORD
		199 *		
028F C2 01 08D4		200	CMPRS LA	REC,N,XR1 POINT TO MICROCODE RECORD
		201 *		
0293 3C 00 02A7		202	MVI	A1+1,0 SETUP BYTE COUNT
0297 0C 00 02AD 02A7		203	CMPO1 MVC	A2+1(1),A1+1 IN ALC INSTRUCTIONS
		204 *		
029D 7D 00 00		205	CLI	O(,XR1),X'D0' CHANGE ANY HEX 'D0'
02A0 F2 01 03		206	JNE	A1 BYTE IN MICROCODE
02A3 7C 2A 00		207	MVI	O(,XR1),X'2A' RECORD TO HEX '2A'
		208 *		
02A6 0E 00 08D4 08D4		209	A1 ALC	REC(N+*),REC(N
02AC 0E 00 08D4 08D4		210	A2 ALC	REC(N+*),REC(N
		211 *		
02B2 36 01 0911		212	A	NEG1,XR1 UPDATE RECORD POINTER
		213 *		
02B6 0E 00 02A7 0905		214	ALC	A1+1(1),ONE UPDATE SHIFT BYTE COUNT
		215 *		
02BC 3D 54 02A7		216	CLI	A1+1,REC,N-REC LOOP UNTIL ALL UNUSED BITS HAVE
02C0 C0 82 0297		217	BL	CMPO1 BEEN SHIFTED OUT OF RECORD
		218 *		
		219 *		
		220 *		CHECK MICROCODE RECORD TYPE
		221 *		
02C4 3D C5 0881		222	CKTYPE CLI	REC+1,C'E' BRANCH IF
02C8 C0 81 0305		223	BE	REPFAO END RECORD
		224 *		
02CC 3D E3 0881		225	CLI	REC+1,C'T' BRANCH IF
02D0 F2 81 04		226	JE	TEXT TEXT RECORD
		227 *		
02D3 C0 87 023C		228	B	READ GO TO READ NEXT RECORD
		229 *		
		230 *		
		231 *		PROCESS MICRO-CODE TEXT RECORD
		232 *		
02D7 3D 00 0886		233	TEXT CLI	REC+6,0 BRANCH IF NO DATA
02DB C0 81 023C		234	BE	READ BYTES IN TEXT RECORD
		235 *		
02DF 0C 01 093C 0889		236	MVC	CSAR(2),REC+9 SETUP CONTROL STG ADDRESS
02E5 C0 87 06F9		237	B	GENADR GENERATE POINTER TO STG AREA
		238 *		
02E9 C2 02 088A		239	LA	REC+10,XR2 POINT TO DATA AREA OF RECORD
		240 *		
02ED 6C 02 02 02		241	TEXT01 MVC	2(3,XR1),2(,XR2) STORE MICROWORD
		242 *		
02F1 D2 01 03		243	LA	3(,XR1),XR1 ADVANCE
02F4 E2 02 03		244	LA	3(,XR2),XR2 POINTERS
		245 *		
02F7 0F 00 0886 0909		246	SLC	REC+6,THREE(1) DECREMENT DATA BYTE COUNT
02FD C0 01 02ED		247	BNZ	TEXT01 BRANCH IF NOT YET ZERO
		248 *		
0301 C0 87 023C		249	B	READ GO TO READ NEXT RECORD
		250 *		

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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252 *****
253 *
254 *      MODIFY CONTROL STORE IMAGE WITH PATCH AREA DATA
255 *
256 *****
257 *
0305 C2 02 7600      258 REPF00 LA PATCH,XR2          POINT TO PATCH AREA
259 *
0309 BD FF 00        260 REP01 CLI 0(,XR2),X'FF'        BRANCH IF PATCH
030C F2 81 97        261 JE REPX                      TERMINATOR BYTE
262 *
030F 2C 01 093C 01  263 REP02 MVC CSAR,1(2,XR2)      SAVE CONTROL STORE ADDRESS
0314 C0 87 06F9      264 B GENADR                     GENERATE POINTER TO STG AREA
265 *
0318 E2 02 02        266 LA 2(,XR2),XR2              ADVANCE PATCH AREA POINTER
267 *
031B 2C 02 093A 02  268 REP05 MVC DPREG,2(3,XR2)     GET CONTROL STORE DATA
269 *
0320 38 80 0938      270 TBN C,BIT0                  BRANCH IF
0324 F2 90 4F        271 JF REP12                     MICRO-INSTRUCTION PATCH
272 *
0327 38 80 093C      273 TBN CSARD,BIT0              BRANCH IF
032B F2 90 08        274 JF REP06                     LEFT CONTROL STORE PATCH
275 *
032E 1C 00 0939 01  276 MVC CR,1(1,XR1)           RETAIN LEFT DATA BYTE
0333 F2 87 05        277 J REP07                      SKIP NEXT INSTRUCTION
278 *
0336 1C 00 093A 02  279 REP06 MVC Y,2(1,XR1)       RETAIN RIGHT DATA BYTE
280 *
033B 0C 01 093E 093A 281 REP07 MVC WORK+1(2),Y      DATA BYTES TO WORK AREA
282 *
0341 0E 00 093E 093E 283 REP08 ALC WORK+1(1),WORK+1  GENERATE
0347 F2 20 06        284 JNOL REP09                   RIGHT DATA
034A 0E 00 0938 0907 285 ALC C(1),TWG              PARITY BIT
0350 C0 01 0341      286 REP09 BNZ REP08
287 *
0354 3B FD 0938      288 SBF C,X'FD'                RESET UNUSED BITS
289 *
0358 0E 00 093D 093D 290 REP10 ALC WORK(1),WORK      GENERATE
035E F2 20 06        291 JNOL REP11                   LEFT DATA
0361 0E 00 0938 090D 292 ALC C(1),EIGHT             PARITY BIT
0367 C0 01 0359      293 REP11 BNZ REP10
294 *
036B 3B F5 0938      295 SBF C,X'F5'                RESET UNUSED BITS
036F 3A 90 0938      296 SBN C,X'90'                SET DATA AND PARITY BITS
297 *
0373 F2 87 1E        298 J REP15                     GO TO SAVE CONTROL STORE DATA
299 *
0376 0C 02 0940 093A 300 REP12 MVC WORKN(3),DPREG   CONTROL STORE DATA TO WORK AREA
301 *
037C 0E 00 0938 0916 302 REP13 ALC C(1),X10         GENERATE
0382 0E 02 0940 0940 303 REP14 ALC WORKN(3),WORKN    MICRO-WORD
0388 C0 A0 037C      304 BOL REP13                   PARITY BIT
038C C0 01 0382      305 BNZ REP14
306 *
0390 3B E0 0938      307 SBF C,X'E0'                RESET UNUSED BITS
308 *
0394 4C 02 02 093A  309 REP15 MVC 2(3,XR1),OPREG    SAVE PATCHED MICROWORD
310 *
0399 D2 01 03        311 REP16 LA 2(,XR1),XR1          ADVANCE
039C E2 02 03        312 LA 3(,XR2),XR2             POINTERS
313 *
039F BD FF 00        314 CLI 0(,XR2),X'FF'        LOOP UNTIL
03A2 C0 01 031B      315 BNE REP05                TERMINATOR FOUND
316 *
03A6 E2 02 01        317 REPX LA 1(,XR2),XR2         LOOP
03A9 34 02 0940      318 ST WORKN,XR2              UNTIL
03AD 38 08 093F      319 TBN WORKN-1,BIT4        END OF

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03B1 C0 90 0309      320 BF REPF00
321 *
PATCH AREA

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LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

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323 *****
324 *
325 *           MICRO-PROCESSOR INITIALIZATION
326 *
327 *****
328 *
329 *           HALT MICROPROCESSOR
330 *
03B5 F3 C4 7E 331 MPHLT SIO X'7E',X'C4' RESET AND DISABLE 3340 INTRPS
332 *
03B8 31 C5 0730 333 LIO K04,X'C5' SET K0 AND K4 (HALT IOP)
03BC 31 C5 0734 334 LIO K034,X'C5' SET K3 (CLOCK RESET)
335 *
336 *-----
337 *           RESET EXTERNAL REGISTERS
338 *
03C0 C2 01 0917 339 LA EXTBL,XR1 POINT TO EXT REG ADDR TABLE
340 *
03C4 3C 00 0938 341 MVI C,0 CLEAR OP REG
03C8 3C 00 093A 342 MVI Y,0 C AND Y FIELDS
343 *
03CC 3C 00 0939 344 EXTRST MVI CR,0 CLEAR OP REG CR FIELD
03D0 C0 87 0677 345 B LOP LOAD OP REG
346 *
03D4 31 C5 0740 347 LIO LEXTZ,X'C5' R4-R7 --> EXTERNAL ZONE REG
348 *
03D8 1C 01 093A 01 349 MVC Y,1(2,XR1) EXT ADDR & DATA --> OP CR & Y
03DD C0 87 0677 350 B LOP LOAD OP REG
351 *
03E1 31 C5 073E 352 LIO LEXTAR,X'C5' R3-R7 --> EXT ADDR REG (EXTAR)
03E5 31 C5 075A 353 LIO LALUD,X'C5' OP REG Y --> A REG --> D REG
03E9 31 C5 0744 354 LIO LEXT,X'C5' D REG --> EXTERNAL REG
355 *
03ED D2 01 02 356 LA Z(XR1),XR1 ADVANCE EXT ADDR TBL POINTER
357 *
03F0 7D FF 00 358 CLI O(XR1),X'FF' LOOP UNTIL
03F3 C0 01 03CC 359 BNE EXTRST END OF ADDRESS TABLE
360 *
361 *-----
362 *           RESET MODE BUFFER
363 *
03F7 3C 06 0938 364 MVI C,X'06' BUILD
03FB 3C 80 0939 365 MVI CR,X'80' 'SMODE'
03FF 3C 80 093A 366 MVI Y,X'80' MICRO-INSTRUCTION
367 *
0403 C0 87 0663 368 MBRST B LXOP EXECUTE 'SMODE' INSTRUCTION
369 *
0407 0E 00 0939 0908 370 ALC CR(1),FCU ADVANCE MODE BUFFER ADDRESS
371 *
040D 38 20 0939 372 TBN CR,BIT2 LOOP UNTIL ALL MODE BUFFER
0411 C0 90 0403 373 BF MBRST LOCATIONS HAVE BEEN RESET
374 *
375 *-----
376 *           INITIALIZE ADDRESS LOCAL STORE (ALS)
377 *
0415 3C 02 0938 378 MVI C,X'02' BUILD 'SABI'
0419 3C 80 0939 379 MVI CR,X'80' MICRO-INSTRUCTION
380 *
041D 3C 00 093A 381 ALSLD MVI Y,0 SET EVEN ALS LOCATIONS TO X'00'
0421 C0 87 0663 382 B LXOP EXECUTE 'SABI' INSTRUCTION
383 *
0425 3A 20 0939 384 SBN CR,BIT2 BUILD 'SADI' MICRO-INSTRUCTION
0429 C0 87 0663 385 B LXOP EXECUTE 'SADI' INSTRUCTION
386 *
042D 3A 01 0939 387 SBN CR,BIT7 SETUP ODD ALS ADDRESS
388 *
0431 3C BF 093A 389 MVI Y,X'BF' SET ODD ALS LOCATIONS TO X'BF'
0435 C0 87 0663 390 B LXOP EXECUTE 'SADI' INSTRUCTION

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0439 3B 20 0939 391 *
043D C0 87 0663 392 SBF CR,BIT2 BUILD 'SABI' MICRO-INSTRUCTION
393 * B LXOP EXECUTE 'SABI' INSTRUCTION
394 *
0441 0E 00 0939 0905 395 ALC CR(1),ONE ADVANCE ALS ADDRESS
396 *
0447 38 20 0939 396 *
044B C0 90 041D 397 TBN CR,BIT2 LOOP UNTIL ALL ALS LOCATIONS
398 * BF ALSLD HAVE BEEN INITIALIZED
399 *
400 *-----
401 *           INITIALIZE ZONE LOCAL STORAGE (ZLS)
402 *
044F 3C 03 0938 403 MVI C,X'03' BUILD
0453 3C 80 0939 404 MVI CR,X'80' 'SZI'
0457 3C 00 093A 405 MVI Y,X'00' MICRO-INSTRUCTION
406 *
045B C0 87 0663 407 ZLSLD B LXOP EXECUTE 'SZI' INSTRUCTION
408 *
045F 0E 00 0939 0905 409 ALC CR(1),ONE ADVANCE ZLS ADDRESS
410 *
0465 38 20 0939 411 TBN CR,BIT2 LOOP UNTIL ALL ZLS
0469 C0 90 0458 412 BF ZLSLD LOCATIONS HAVE BEEN RESET
413 *
414 *-----
415 *           INITIALIZE INDEX, CSAR, AND ADDRESS COMPARE REGS
416 *
046D 3C 00 0938 417 MVI C,0 X'00' --> OP REG C
0471 3C 00 0939 418 MVI CR,0 X'00' --> OPREG CR
0475 3C BF 093A 419 MVI Y,X'BF' INDEX VALUE --> OP REG Y
0479 C0 87 0677 420 B LOP LOAD OP REGISTER
421 *
047D 31 C5 075A 422 LIO LALUD,X'C5' Y REG --> A REG --> D REG
0481 31 C5 0752 423 LIO LINDEX,X'C5' D REG --> INDEX REG
424 *
0485 3C 00 093A 425 MVI Y,0 X'00' --> OP REG Y
0489 C0 87 0677 426 B LOP LOAD OP REGISTER
427 *
048D 31 C5 075A 428 LIO LALUD,X'C5' Y REG --> A REG --> D REG
0491 31 C5 0748 429 LIO LCSADR,X'C5' X'0000' --> CSAR & ADDR COMPARE
430 *
0495 31 C5 0730 431 LIO K04,X'C5' RESET K2
0499 31 C5 072C 432 LIO RSPCR,X'C5' RESET PCR LATCH AND X REG
433 *
434 *-----
435 *           CHECK FOR SUCCESSFULL INITIALIZATION
436 *
049D 31 C7 072E 437 LIO SIDLE,X'C7' SENSE IDLE STATUS
04A1 30 C7 0940 438 SNS WORKN,X'C7'
439 *
04A5 3D F7 0940 440 CLI WORKN,X'F7' GO TO ERROR HALT IF
04A9 C0 01 04EB 441 BNE IOPERR INCORRECT IDLE SENSE
442 *
04AD 31 C5 0732 443 LIO KC24,X'C5' SET K2 (SERVICE MODE)
04B1 31 C5 0750 444 LIO SVACC,X'C5' SERVICE ACCESS CYCLE
04B5 31 C5 0734 445 LIO K034,X'C5' SET K3 (CLOCK RESET)
04B9 31 C7 0736 446 LIO SPTR,X'C7' SENSE ACCESS POINTER REG
04BD 30 C7 0940 447 SNS WORKN,X'C7'
448 *
04C1 3D A1 0940 449 CLI WORKN,X'A1' GO TO ERROR HALT IF
04C5 C0 01 04EB 450 BNE IOPERR INCORRECT ACCESS POINTER
451 *
04C9 31 C7 0742 452 LIO SALS8,X'C7' SENSE ALSB
04CD 30 C7 093E 453 SNS WORKN-2,X'C7'
04D1 31 C7 0738 454 LIO SINDEK,X'C7' SENSE ALSD & INDEX REG
04D5 30 C7 0940 455 SNS WORKN,X'C7'
456 *
04D9 0D 01 093F 0903 457 CLC WORKN-1(2),NULLS GO TO ERROR HALT IF
04DF C0 01 04EB 458 BNE IOPERR INCORRECT NIAR VALUE

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LDSO 3340 STANDALONE MICROCODE LOADER MOD 12 - 3741

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		459 *		
04E3	3D BF 0940	460	CLI	WORKN,X'BF'
04E7	C0 81 04F2	461	BE	LDCS
		462 *		
04EB	F0 6F 1B	463	IOPERR	HRL H4,H0
		464 *		
04EE	C0 87 03B5	465	B	MPHLT
		466 *		

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		468		*****
		469 *		
		470 *		LOAD CONTROL STORAGE WITH ATTACHMENT MICROCODE
		471 *		
		472		*****
		473 *		
04F2	OC 01 093C 0503	474	LDCS	MVC CSAR(2),NULLS INITIALIZE CONTROL STORE ADDR
		475 *		
04F8	C0 87 05F4	476	LDCS01	B LCSAR LOAD CONTROL STORE ADDR REG
		477 *		
04FC	7B 60 00	478	SBF	O(,XR1),X'60' RESET UNUSED BITS
		479 *		
04FF	7B 80 00	480	TBN	O(,XR1),BITC BRANCH IF NOT
0502	F2 90 2E	481	JF	LDCS02 CONTROL STORE DATA AREA
		482 *		
0505	OC 02 093A 0903	483	MVC	OPREG(3),NULLS MOVE ZEROS PATTERN TO OP REG
		484 *		
050B	C0 87 061C	485	B	WRCS WRITE ZEROS TO
050F	C0 87 0630	486	B	RDCS CONTROL STORE AND READ BACK
		487 *		
0513	OD 02 093A 0936	488	CLC	OPREG(3),IOPIN+2 BRANCH IF
0519	F2 01 82	489	JNE	LDCS05 CONTROL STORE ERROR
		490 *		
051C	OC 02 093A 0915	491	MVC	OPREG(3),X3FFF MOVE ONES PATTERN TO OP REG
		492 *		
0522	C0 87 061C	493	B	WRCS WRITE ONES TO
0526	C0 87 0630	494	B	RDCS CONTROL STORE AND READ BACK
		495 *		
052A	OD 02 093A 0936	496	CLC	OPREG(3),IOPIN+2 BRANCH IF
0530	F2 01 6B	497	JNE	LDCS05 CONTROL STORE ERROR
		498 *		
0533	1C 02 093A 02	499	LDCS02	MVC OPREG(3),2(,XR1) GET MICROWORD FROM STG AREA
0538	3B E0 0938	500	SBF	C,X'E0' RESET UNUSED BITS
		501 *		
053C	C0 87 061C	502	B	WRCS WRITE MICROWORD TO
0540	C0 87 0630	503	B	RDCS CONTROL STORE AND READ BACK
		504 *		
0544	OD 02 093A 0936	505	CLC	OPREG(3),IOPIN+2 BRANCH IF
054A	F2 81 11	506	JE	LDCS03 CONTROL STORE ERROR
		507 *		
054D	7B 80 00	508	TBN	O(,XR1),BITO BRANCH IF ERROR
0550	F2 10 4B	509	JT	LDCS05 IN DATA AREA
		510 *		
0553	7A 20 00	511	SBN	O(,XR1),BIT2 SET INVERT BIT AND
0556	3A 20 0938	512	SBN	C,BIT2 RE-WRITE CONTROL STORE
055A	C0 87 061C	513	B	WRCS
		514 *		
055E	OE 00 093C 0905	515	LDCS03	ALC CSARD(1),ONE ADVANCE CONTROL STORE ADDR
		516 *		
0564	3B 80 093C	517	TBN	CSARD,BITO LOOP UNTIL ENTIRE
0568	C0 90 04F8	518	BF	LDCS01 BLOCK HAS BEEN LOADED
		519 *		
056C	3B 80 093C	520	SBF	CSARD,BITO ADVANCE CONTROL STG
0570	OE 00 093B 0905	521	ALC	CSARB(1),ONE ADDRESS TO NEXT BLOCK
		522 *		
0576	3B 20 093B	523	TBN	CSARB,BIT2 LOOP UNTIL ALL
057A	C0 90 04F8	524	BF	LDCS01 BLOCKS HAVE BEEN LOADED
		525 *		
057E	OC 01 093C 0903	526	MVC	CSAR(2),NULLS INITIALIZE CONTROL STORE ADDR
		527 *		
0584	C0 87 05F4	528	LDCS04	B LCSAR LOAD CONTROL STORE ADDR REG
		529 *		
0588	1C 02 093A 02	530	MVC	OPREG(3),2(,XR1) GET MICROWORD FROM STG AREA
058D	3B C0 0938	531	SBF	C,X'CO' IGNORE UNUSED BITS
		532 *		
0591	C0 87 0630	533	B	RDCS READ CONTROL STORE
		534 *		
0595	OD 02 093A 0936	535	CLC	OPREG(3),IOPIN+2 BRANCH IF NO

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ERR LOC OBJECT CODE	ADDR STMT SOURCE STATEMENT
0598 F2 81 07	536 JE LDCS06
	537 *
059E F0 6F 57	538 LDCS05 HPL H3,HO
	539 *
05A1 C0 87 04F2	540 B LDCS
	541 *
05A5 0E 00 093C 0905	542 LDCS06 ALC CSARD(1),ONE
	543 *
05AB 38 80 093C	544 TBN CSARD,BIT0
05AF C0 90 0584	545 BF LDCS04
	546 *
05B3 38 80 093C	547 SBF CSARD,BIT0
05B7 0E 00 093B 0905	548 ALC CSARB(1),ONE
	549 *
05B0 38 20 093B	550 TBN CSARB,BIT2
05C1 C0 90 0584	551 BF LDCS04
	552 *

CONTROL STORE ERROR  
 \*\*\* HALT 03 \*\*\*  
 GO TO RETRY  
 ADVANCE CONTROL STORE ADDR  
 LOOP UNTIL ENTIRE  
 BLOCK HAS BEEN TESTED  
 ADVANCE CONTROL STG  
 ADDRESS TO NEXT BLOCK  
 LOOP UNTIL ALL  
 BLOCKS HAVE BEEN TESTED

ERR LOC OBJECT CODE	ADDR STMT SOURCE STATEMENT
	554 *****
	555 *
	556 * START MICROPROGRAM EXECUTION *
	557 *
	558 *****
	559 *
05C5 31 C5 074C	560 GO LIO INACC,X'C5'
05C9 31 C5 072E	561 LIO RNMODE,X'C5'
05CD 31 C5 074A	562 LIO RUNIOP,X'C5'
	563 *
05D1 0C 01 0940 0905	564 MVC WORKN(2),ONE
	565 *
05D7 0E 01 0940 0905	566 GOLP ALC WORKN(2),ONE
05DD C0 A0 04E8	567 BOL IOPERR
05E1 30 C5 0935	568 SNS IOPIN+1,X'C5'
05E5 38 01 0935	569 TBN IOPIN+1,BIT7
05E9 C0 10 05D7	570 BT GOLP
	571 *
05ED F0 7C 7C	572 ENDHLT HPL HE,HE
05F0 C0 87 05ED	573 B ENDHLT
	574 *

INITIAL ACCESS CYCLE  
 RESET K REG (RUN MODE)  
 START MICRO-PROCESSOR  
 INITIALIZE TIMER COUNT  
 LOOP UNTIL  
 MICRO-PROCESSOR  
 STARTS OR TIMER  
 COUNT OVERFLOWS  
 \*\*\* HALT EE \*\*\*  
 \*\*\* SUCCESSFUL COMPLETION \*\*\*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

576 *****
577 *
578 *           SVP INTERFACE CONTROL SUBROUTINES
579 *
580 *****
581 *
582 *           LOAD CONTROL STORAGE ADDRESS REGISTER (CSAR)
583 *
584 *
05F4 34 08 061B 585 LCSAR  ST  LCSARX+3,ARR  SAVE RETURN ADDRESS
586 *
587 *           MVT  C,0           X'00' --> OP REG C FIELD
05F8 3C 00 0938 588 MVC  CR(1),CSARB        CSAR(B) VALUE --> OP REG CR FLD
05FC 0C 00 0939 093B 589 MVC  Y(1),CSARD        CSAR(D) VALUE --> OP REG Y FLD
0602 0C 00 093A 093C 590 *
591 *           B  LOP           LOAD OP REG
0608 C0 87 0677 592 *
593 *           LIO  LALUD,X'CS'  OP REG Y --> A REG --> D REG
060C 31 C5 075A 594 LIO  LDCSR,X'CS'        CS ADDR --> CSAR
0610 31 C5 0746 595 *
596 *           B  GENADR        GENERATE STORAGE AREA POINTER
0614 C0 87 06F9 597 *
0618 C0 87 0000 598 LCSARX B  *-*        RETURN TO CALLING ROUTINE
599 *
600 *-----
601 *           WRITE CONTROL STORAGE
602 *
061C 34 08 062F 603 WRCS  ST  WRCSX+3,ARR  SAVE RETURN ADDRESS
604 *
605 *           B  LOP           LOAD OP REG
0620 C0 87 0677 606 *
607 *           LIO  WRCSL,X'CS'  WRITE CONTROL STORE LEFT
0624 31 C5 0754 608 LIO  WRCSR,X'CS'        WRITE CONTROL STORE RIGHT
0628 31 C5 0756 609 *
062C C0 87 0000 610 WRCSX B  *-*        RETURN TO CALLING ROUTINE
611 *
612 *-----
613 *           READ CONTROL STORAGE
614 *
0630 34 08 0662 615 RDCS  ST  RDCSX+3,ARR  SAVE RETURN ADDRESS
616 *
617 *           LIO  LOPC,X'CS'   RESET OP REG C
0634 31 C5 0738 618 LIO  LOPCR,X'CS'        RESET OP REG CR
0638 31 C5 073A 619 LIO  LGI',X'CS'         RESET OP REG Y
0640 31 C5 074E 620 LIO  CSACC,X'CS'        CONTROL STORE --> OP REG
621 *
622 *           B  SOP           SENSE OP REGISTER
0644 C0 87 06AD 623 *
624 *           TBF  C,BIT2      GO TO
0648 39 20 0938 625 TBF  IOPIN,BIT2        EXIT IF
064C 39 20 0934 626 JT  RDCSX              NO INVERT BITS ON
0650 F2 10 0C 627 *
628 *           TBN  C,BIT2      ADJUST FOR
0653 38 20 0938 629 TBN  IOPIN,BIT2        HARDWARE INVERSION OF
0657 38 20 0934 630 BF  INVERT             OP REG BITS IF REQUIRED
065B C0 90 06D1 631 *
065F C0 87 0000 632 RDCSX B  *-*        RETURN TO CALLING ROUTINE
633 *
634 *-----
635 *           LOAD OP REG AND EXECUTE MICRO-INSTRUCTION
636 *
0663 34 08 0676 637 LXOP  ST  LXOPX+3,ARR  SAVE RETURN ADDRESS
638 *
0667 C0 87 0677 639 *           B  LOP           LOAD OP REG
640 *
0668 31 C5 0730 641 LIO  K04,X'CS'         RESET K2 (SERVICE MODE)
066F 31 C5 0758 642 LIO  PROC,X'CS'        SERVICE PROCESS CYCLE
643 *

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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0673 C0 87 0000 644 LXOPX  B  *-*        RETURN TO CALLING ROUTINE
645 *
646 *-----
647 *           LOAD OP REGISTER
648 *
0677 34 08 06AC 649 LOP  ST  LOPX+3,ARR  SAVE RETURN ADDRESS
650 *
0678 31 C5 0732 651 *           LIO  K024,X'CS'  SET K4 (SERVICE MODE)
652 *
067F 3C 08 0940 653 *           MVI  WORKN,X'08'  BUILD SVP
0683 0C 00 093F 0938 654 MVC  WORKN-1(1),C        INTERFACE CONTROL
0689 31 C5 0940 655 LIO  WORKN,X'CS'        LOAD OP REG C
656 *
068D 3A 02 0940 657 SBN  WORKN,BIT6        BUILD SVP
0691 0C 00 093F 0939 658 MVC  WORKN-1(1),CR      INTERFACE CONTROL
0697 31 C5 0940 659 LIO  WORKN,X'CS'        LOAD OP REG CR
660 *
0698 3A 01 0940 661 SBN  WORKN,BIT7        BUILD SVP
069F 0C 00 093F 093A 662 MVC  WORKN-1(1),Y      INTERFACE CONTROL
06A5 31 C5 0940 663 LIO  WORKN,X'CS'        LOAD OP REG Y
664 *
06A9 C0 87 0000 665 LOPX  B  *-*        RETURN TO CALLING ROUTINE
666 *
667 *-----
668 *           SENSE OP REG
669 *
06AD 34 08 06D0 671 SOP  ST  SOPX+3,ARR  SAVE RETURN ADDRESS
672 *
0681 31 C7 0738 673 *           LIO  SOPC,X'C7'   SENSE OP REG C
0685 30 C7 0940 674 SNS  WORKN,X'C7'        SENSE OP REG CR AND Y
0689 31 C7 073A 675 LIO  SOPCR,X'C7'
068D 30 C7 0935 676 SNS  IOPIN+1,X'C7'
677 *
06C1 0C 00 0936 0934 678 MVC  IOPIN+2(1),IOPIN  MOVE VALUES SENSED
06C7 0C 00 0934 0940 679 MVC  IOPIN(1),WORKN    TO INPUT WORK AREA
680 *
06CD C0 87 0000 681 SOPX  B  *-*        RETURN TO CALLING ROUTINE
682 *

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
684	*			*****
685	*			*
686	*			DATA PROCESSING SUBROUTINES
687	*			*
688	*			*****
689	*			
690	*			ADJUST FOR HARDWARE INVERTED OP REG BITS
691	*			
06D1	34 08 06F8			
692	INVERT	ST	IVRTX+3,ARR	SAVE RETURN ADDRESS
693	*			
694		MVC	WORKN(3),NEG1	
695		SLC	WORKN(3),IOPIN+2	RESTORE
696		SBF	WORKN-2,X'EO'	HARDWARE
697		SBF	IOPIN,X'1F'	INVERTED
698		ALC	IOPIN(1),WORKN-2	OP REG BITS
699		MVC	IOPIN+2(2),WORKN	
700	*			
06F5	C0 87 0000			
701	IVRTX	B	*--*	RETURN TO CALLING ROUTINE
702	*			
703	*			-----
704	*			GENERATE MICROCODE STORAGE AREA ADDRESS
705	*			
06F9	34 08 072A			
706	GENADR	ST	GENAX+3,ARR	SAVE RETURN ADDRESS
707	*			
06FD	0C 01 0940 093C			
0703	0E 00 0940 0940			
708		MVC	WORKN(2),CSAR	CONTROL STG ADDR TO WORK AREA
709		ALC	WORKN(1),WORKN	DROP LEFT/RIGHT SELECT BIT
710	*			
0709	C2 01 1000			
0700	36 01 0940			
711		LA	UCODE,XR1	POINT TO MICROCODE STG AREA
712		A	WORKN,XR1	ADD ADJUSTED CONTROL STORE ADDR
713	*			
0711	3C FE 093E			
714		MVI	WORKN-2,X'FE'	SETUP SHIFT TERMINATOR
715	*			
0715	0E 02 0940 0940			
0718	38 80 093E			
071F	C0 10 0715			
716	GENALP	ALC	WORKN(3),WORKN	SHIFT CONTROL STORE
717		TBN	WORKN-2,BITO	ADDRESS LEFT UNTIL RIGHT
718		BT	GENALP	JUSTIFIED ON BYTE BOUNDARY
719	*			
0723	36 01 093F			
720		A	WORKN-1,XR1	ADD ADJUSTED CONTROL STG ADDR
721	*			
0727	C0 87 0000			
722	GENAX	B	*--*	RETURN TO CALLING ROUTINE
723	*			

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
725	*			*****
726	*			*
727	*			SVP INTERFACE CONTROL CONSTANTS
728	*			*
729	*			*****
730	*			
072B	0001	072C	731 RSPCR	DC XL2'0001'
072D	0002	072E	732 RNMODE	DC XL2'0002'
		072E	733 SIDLE	EQU RNMODE
072F	8802	0730	734 K04	DC XL2'8802'
0731	A802	0732	735 K024	DC XL2'A802'
0733	9802	0734	736 K034	DC XL2'9802'
0735	0005	0736	737 SPTR	DC XL2'0005'
0737	0008	0738	738 LOPC	DC XL2'0008'
		0738	739 SOPC	EQU LOPC
		0738	740 SINDE	EQU SOPC
0739	000A	073A	741 LOPCR	DC XL2'000A'
		073A	742 SOPCR	EQU LOPCR
0738	000B	073C	743 LOPY	DC XL2'000B'
073D	000C	073E	744 LEXTAR	DC XL2'000C'
073F	010C	0740	745 LEXTZ	DC XL2'010C'
0741	000D	0742	746 SALS	DC XL2'000D'
0743	020D	0744	747 LEXT	DC XL2'020D'
0745	080D	0746	748 LDCSAR	DC XL2'080D'
0747	0C0D	0748	749 LCSADR	DC XL2'0C0D'
0749	000E	074A	750 RUNIOP	DC XL2'000E'
074B	0C0E	074C	751 INACC	DC XL2'0C0E'
074D	0E0E	074E	752 CSACC	DC XL2'0E0E'
074F	8E0E	0750	753 SVACC	DC XL2'8E0E'
0751	8B0E	0752	754 LINDEX	DC XL2'8B0E'
0753	AE0E	0754	755 WRCSL	DC XL2'AE0E'
0755	CE0E	0756	756 WRCSR	DC XL2'CE0E'
0757	000F	0758	757 PROC	DC XL2'000F'
0759	020F	075A	758 LALUD	DC XL2'020F'
			759 *	
				RESET PCR LATCH AND X REG
				RESET K REG (RUN MODE)
				SENSE IDLE STATUS
				SET K0 AND K4 (HALT IOP)
				SET K2 (SERVICE MODE)
				SET K3 (CLOCK RESET)
				SENSE ACCESS POINTER REG
				LOAD OP REG C
				SENSE JP REG C
				SENSE INDEX REG
				LOAD OP REG CR
				SENSE OP REG CR
				LOAD OP REG Y
				R3-R7 --> EXT ADDR REG (EXTAR)
				R4-R7 --> EXTERNAL ZONE REG
				SENSE ALSB
				D REG --> EXTERNAL REG
				LOAD CSAR
				LOAD CSAR AND ADDR COMPARE REG
				START MICRO-PROCESSOR
				INITIAL ACCESS CYCLE
				CONTROL STORE --> OP REG
				SERVICE ACCESS CYCLE
				LOAD INDEX REG
				WRITE CONTROL STORE LEFT
				WRITE CONTROL STORE RIGHT
				SERVICE PROCESS CYCLE
				OP REG Y --> A REG --> D REG

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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761 *****
762 *
763 *          CONSTANTS AND RESERVED STORAGE AREAS
764 *
765 *****
766 *
0880 767 ORG X'0880'          RESERVED FOR
0880 768 INPUT EQU *          CARD READ IN AREA
08FF 769 DS XL128
770 *
0900 00000000 0903 771 NULLS DC 4XL1'00'
0904 0001 0905 772 ONE DC IL2'1'
0906 0002 0907 773 TWO DC IL2'2'
0908 0003 0909 774 THREE DC IL2'3'
090A 0004 0908 775 FOUR DC IL2'4'
090C 0008 090D 776 EIGHT DC IL2'8'
090E FFFFFFFF 0911 777 NEG1 DC IL4'-1'
778 *
0912 F1 0912 779 D1 DC CL1'1'
780 *
0913 03FFFF 0915 781 X3FFF DC XL3'03FFF'          CS DATA AREA TEST PATTERN
0916 10 0916 782 X10 DC XL1'10'
783 *
0917 2D80 0917 784 EXTBL EQU *          EXTERNAL
0919 2D00 0918 785 STR DC XL2'2D80'          REGISTER
091B 2F00 091A 786 DC XL2'2D00'          ADDRESS
091D 3300 091C 787 SCN DC XL2'2F00'          TABLE
091F 2500 091E 788 DXC DC XL2'3300'
0921 238F 0920 789 FTG DC XL2'2500'
0923 2300 0922 790 DST DC XL2'238F'
0925 2780 0924 791 DC XL2'2300'
0927 2700 0926 792 FHF DC XL2'2780'
0929 3F00 0928 793 DC XL2'2700'
092B FF 092A 794 S80 DC XL2'3F00'
092B 795 DC XL1'FF'          TERMINATOR
092C 00 092C 796 *
092C 797 IND DC XL1'0'          PROGRAM INDICATORS
092D C6C1F0 092F 798 *
092F 799 FA0D DC CL3'FA0'          MICROCODE SECTION ID
0930 800 *
0930 801 SEQ DS CL4          CURRENT CARD SEQUENCE NUMBER
0934 802 *
0934 803 IOPIN EQU *          COMMON IOP SENS:
0937 804 DS XL4          DATA STORAGE AREA
0938 805 *
093A 806 OPREG DS XL3          OP REG DATA STORAGE AREA
0938 807 C EQU OPREG-2          OP REG C BYTE
0939 808 CR EQU OPREG-1          OP REG CR BYTE
093A 809 Y EQU OPREG          OP REG Y BYTE
093B 810 *
093C 811 CSAR DS XL2          CONTROL STORE ADDRESS
093B 812 CSARB EQU CSAR-1          CSAR BLOCK BYTE
093C 813 CSARD EQU CSAR          CSAR DISPLACEMENT BYTE
814 *
093D 815 WORK EQU *          GENERAL PURPOSE
0940 816 WORKN DS XL4          WORK AREA
817 *
7600 818 ORG X'7600'
7600 FFFFFFFF 77FF 819 PATCH EQU *          MICROCODE PATCH AREA
7608 FFFFFFFF 820 DC 512XL1'FF'
7610 FFFFFFFF 820
7618 FFFFFFFF 820
7620 FFFFFFFF 820
7628 FFFFFFFF 820
7630 FFFFFFFF 820
7638 FFFFFFFF 820
7640 FFFFFFFF 820

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7648 FFFFFFFF 820
7650 FFFFFFFF 820
7658 FFFFFFFF 820
7660 FFFFFFFF 820
7668 FFFFFFFF 820
7670 FFFFFFFF 820
7678 FFFFFFFF 820
7680 FFFFFFFF 820
7688 FFFFFFFF 820
7690 FFFFFFFF 820
7698 FFFFFFFF 820
76A0 FFFFFFFF 820
76A8 FFFFFFFF 820
76B0 FFFFFFFF 820
76B8 FFFFFFFF 820
76C0 FFFFFFFF 820
76C8 FFFFFFFF 820
76D0 FFFFFFFF 820
76D8 FFFFFFFF 820
76E0 FFFFFFFF 820
76E8 FFFFFFFF 820
76F0 FFFFFFFF 820
76F8 FFFFFFFF 820
7700 FFFFFFFF 820
7708 FFFFFFFF 820
7710 FFFFFFFF 820
7718 FFFFFFFF 820
7720 FFFFFFFF 820
7728 FFFFFFFF 820
7730 FFFFFFFF 820
7738 FFFFFFFF 820
7740 FFFFFFFF 820
7748 FFFFFFFF 820
7750 FFFFFFFF 820
7758 FFFFFFFF 820
7760 FFFFFFFF 820
7768 FFFFFFFF 820
7770 FFFFFFFF 820
7778 FFFFFFFF 820
7780 FFFFFFFF 820
7788 FFFFFFFF 820
7790 FFFFFFFF 820
7798 FFFFFFFF 820
77A0 FFFFFFFF 820
77A8 FFFFFFFF 820
77B0 FFFFFFFF 820
77B8 FFFFFFFF 820
77C0 FFFFFFFF 820
77C8 FFFFFFFF 820
77D0 FFFFFFFF 820
77D8 FFFFFFFF 820
77E0 FFFFFFFF 820
77E8 FFFFFFFF 820
77F0 FFFFFFFF 820
77F8 FFFFFFFF 820

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

CROSS-REFERENCE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
822	*			*****						
823	*									
824	*			SYMBOL DEFINITIONS						
825	*									
826	*			*****						
827	*									
828	*			LOCAL STORE REGISTERS						
829	*									
0001	830	XR1	EQU	X'01'	INDEX REGISTER 1					
0002	831	XR2	EQU	X'02'	INDEX REGISTER 2					
0008	832	ARR	EQU	X'08'	ADDRESS RECALL REG (CURRENT LEVEL)					
833	*									
834	*			-----						
835	*			HALT IDENTIFIERS						
836	*									
006F	837	H0	EQU	X'6F'						
0003	838	H1	EQU	X'03'						
0076	839	H2	EQU	X'76'						
0057	840	H3	EQU	X'57'						
001B	841	H4	EQU	X'1B'						
005D	842	H5	EQU	X'5D'						
003B	843	HH	EQU	X'3B'						
007C	844	HE	EQU	X'7C'						
845	*									
846	*			-----						
847	*			PROGRAM INDICATORS						
848	*									
0080	849	SEQCK	EQU	X'80'	CARD SEQUENCE CK INITIATED					
850	*									
851	*			-----						
852	*			BIT POSITION SYMBOLS						
853	*									
0080	854	BIT0	EQU	X'80'						
0040	855	BIT1	EQU	X'40'						
0020	856	BIT2	EQU	X'20'						
0008	857	BIT4	EQU	X'08'						
0002	858	BIT6	EQU	X'02'						
0001	859	BIT7	EQU	X'01'						
860	*									
861	*			-----						
862	*			OTHER REFERENCES EXTERNAL TO THIS SECTION						
863	*									
0880	864	REC	EQU	INPUT	LOAD SUBROUTINE INPUT AREA					
08D4	865	REC.N	EQU	REC+84	END OF MICROCODE TEXT RECORD					
00FF	866	LDWORK	EQU	CDREAD-1	TEMPORARY STORAGE LOCATION					
867	*									
1000	868	UCODE	EQU	X'1000'	ATTACHMENT MICROCODE STORAGE AREA	REH				
869	*									
870	*									
871	*									
872	*			NOTE * NOTE * NOTE * NOTE * NOTE * NOTE * NOTE * NOTE * NOTE * NOTE * NOTE *						
873	*									
874	*			FIXED LOCATION X'1FFA' AND X'1FFB' MUST CONTAIN X'0200'						
875	*			BECAUSE FE0(1442) AND FD0(2560) LOADERS PICK UP THE						
876	*			STARTING ADDRESS OF THIS PROGRAM (WHICH IS '0200') FROM THESE						
877	*			LOCATIONS.						
878	*									
879	*									
1FFB	880		ORG	X'1FFA'						
			DC	XL2'0200'						
881	*									
FFFF	882		END							

1FFA  
1FFA 0200



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OBJECT CARD LISTING

OBJECT CARD LISTING

THE CHARACTER INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
GBK GBD PN 51	32774 EC 571874	3340 STANDALONE	LOADER - 3741	84228422	LDS00000
T+-:0-D <HB EC	360/16N/065R8AEP	£UD_8 VP&U #3&0/	1JE11&VL3&E&J&SX	3&0/0&VR9BVP&UD>	<1PM JTYLDS00001
T+-A5 XPS XR M	A4 D+OH*AD #P)B	GB H G@ D £(-	NE P12".7"J £<P	CE P72-T7'DA &DA	£+* OE*LDS00002
T+-D:0-H #<HABHB	4BD:0&5S8AE--UD=	8 V-U #3&0S1J >	1&V\$3&E&C/£S0&EVS	9BV-2UAX3&0S0&5S	8 V* 694LDS00003
T+-E52/ I> /Q8I	924<H0H* I #P;B	GCOA# -"2ID	H"03=B 8H"2BG &A	1&E2-JK* X2CX B	"H  1 LDS00004
TC-FD £&# <B	G 0I /OH				50 LDS00005
T £G' £					#MLDS00006
T+-H:0-DE G2 (H	A 3&ABM 8& U"0I	BACMA -44 &HV( D	B 2BG < OU3B(2	190S @-D(C <I<OT	2Y* 0.ULDS00007
T+-ISA<BG CB &S	-; * 2-DDP )-L44	B0-U72-DT+Y I.D4	CPOU32-DWAT I<OU	K-; * QHDB1G7M IH	AF& L:£LDS00008
T+-HO/OH22F2C+H	I.<B& S. /OH22F	60H*B <HAB1&2 H	XC B, &Hx-) 2-D	C-BY C- H5 TMC-	H5 - JCQLDS00009
T+-,5CQABJD+ H	XB&M HXOHHBV37	EBMG -£<E ;<H-H	AA<BG TO' SF0HD	BI OABLOHS*BGA7X	B -- NC4LDS00010
T+-<WSH08 -K &I	S <I' SF&X &.	_OH*B <HB1-B"0C	2-R*£ £U2 *BGA7X	S -H£ -U: TS BLT	2UD2 2EHLDS00011
T+-(/+H I  HEBA0	BLUA2Y*EG I+-H	< £U=BLY+ U=BL#	2H Q+ U8BE- &£	A+"1+ B BL4I -H	-A-8 "3-LDS00012
T+-+* U8&E7 &£	Q+"MI+CD&BLT2/10	< -V BLY+ U8BJQ	+ -V BMC Y (20 D	C-T?-BL/< -HI+_H	A =H OCULDS00013
T+- P -+ "0C &£	£8-HA( HI&C-HBL"	U <I22J-<*MG<CG	EA3LB £UP I+CO	BLY2 U90H*F)3G	EA4 £Z2LDS00014
T+-£KG DI+-G /OR	7<*MG TGEA5Y11&£	D4-DB--2 0 DC3C0	FBL-2- U9 H I+£B	GAWK+ U9B&£8H U	90I #AHLDS00015
T+-JIA <2 -U8 H	I+L0 BL, /ORT+S	I+*BGAW< £U9I.2	I+£BGAW<#H U90H*	FQ08 BLUIAL--BLX	U & J £LDS00016
T+-KHGL0CBL-2- U	9I' I+£BGAW< U	9B&M\$H U90I 0030	BL-2 U9 .2I+£E	GAX*11&£<*MGMT0	BLY EEQLDS00017
T+-LCOH*F)3GEA5Y	11&£)H<*MG<CGEA20	110*><<*I&C77BMC	&L,<*MG<TGFA5	11&£4<*G(TCGBM	*Y&U 4R*LDS00018
T+-L=&£ AA+£110)	B<<*I TGG23-010V	C&DI OUCC DD:36	*BMC -£L22F2\$0H*	C_60ABL0I 2BGA-J	#Q 2L<LDS00019
T+-M9;H 2Z >C H	I+-UCOH*FG<BGAT	I -U:BL\$Z QHC -U	:BJP /OQ*OH*F< 4	BBLIYI17HAE10BBLY	B+= :84LDS00020



E043 5203 CYCLE STEAL & HAMMER ADDRESSING TESTS

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
      2 DECK 4
      3 SEQ 0
CA00 4 UVWXYZ START X'A00'
      5 TREP
      6 *****
      7 *
      8 * SYSTEM/3 5203 CYCLE STEAL & HAMMER ADDRESSING TESTS *
      9 *
     10 *****
     11 * SECTION 4 - ROUTINES 1 & 2 *
     12 *****
CA00 E043 0A01 13 DC XL2'E043' PROGRAM IDENTIFICATION
CA02 00 0A02 14 DC XL1'0' FLAGS
CA03 01 0A03 15 DC XL1'1' CURRENT ROUTINE NUMBER
CA04 0000 0A05 16 DC XL2'0' RESERVED
CA06 CA0D 0A07 17 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX
CA08 0D36 0A09 18 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE
CA0A E05000 0A0C 19 SPUdT DC XL3'E05000' UNIT DEFINITION TABLE - PRINTER
     20 *****
     21 *
     22 * ROUTINE 1 - CYCLE STEAL TEST *
     23 *
     24 *****
CA0D 01 0A0D 25 RTN1 DC XL1'1' ROUTINE NUMBER
CA0E 00 0A0E 26 DC XL1'0' FLAGS
CA0F 0BB7 0A10 27 DC AL2(RTN2) ADDRESS OF NEXT ROUTINE PREFIX
     28 *****
CA11 38 04 0208 29 TBN SBYTE0,SSW05 PRINT ON MPCU
CA15 F2 90 0A 30 JF NRTIO PRINT TITLE
CA18 C0 87 021A 31 B PRINT
CA1C 42 0A1C 32 DC XL1'42'
CA1D 10 0A1D 33 DC IL1'16'
CA1E 0D01 0A1F 34 DC AL2(TITL1)
CA20 E000 0A21 35 DC XL2'E000'
CA22 C1 E0 0A29 36 NRTIO TIO BAPRT,NRDY PRINTER READY
CA26 F2 87 14 37 J TOGOON
CA29 38 04 0208 38 BAPRT TBN SBYTE0,SSW05 PRINT ON MPCU SW. ON
CA2D F2 90 0A 39 JF HRALT
CA30 C0 87 021A 40 B PRINT PRINT MAKE PRINTER READY
CA34 41 0A34 41 DC XL1'41'
CA35 1F 0A35 42 DC IL1'31'
CA36 0D30 0A37 43 DC AL2(MAKADY)
OL38 E0E1 0A39 44 DC XL2'E0E1'
CA3A F0 7C 03 45 HRALT HPL X'03',X'7C' HALT E1
CA3D 3C 00 0D37 46 TOGOON MVI LPOUNT,X'00' ZERO LOOP COUNT
     47 *****
     48 * ISSUE PRINT AND SPACE WITH BLANK DATA FIELD *
     49 *****
CA41 31 E6 0CE8 50 KZANGO LIO WRDADP,LPDAR LOAD DAR WITH WRONG ADDR.
CA45 3C 7F 0A7B 51 MVI FORCE+1,X'7F'
CA49 39 30 0A0C 52 TBF SPUdT,B'110000' 100 LPM?
CA4D F2 10 0E 53 JT SUNERD
CA50 30 E2 0D32 54 SNS STAT2,X'E2' GRAB TIMINGS
CA54 38 02 0D31 55 TBN STAT2-1,B'10' HRS.IN POS.M-1
CA58 F2 10 0E 56 JT LOBLNK
CA5B F2 87 04 57 J SFOUR
CA5E C0 87 0B89 58 SUPERD B M4DEL
CA62 3C 7C 0A7B 59 SFOUR MVI FORCE+1,X'7C'
CA66 3C 40 08FF 60 LOBLNK MVI PRDAT,X'40' PUT A BLANK IN PRT.AREA
CA6A 0C 83 08FE 08FF 61 MVC PRDAT-1(132),PRDAT
CA70 C0 87 0C5D 62 B NEXIO GO DO A PRINT & SPACE
CA74 E201 0A75 63 DC XL2'E201'
CA76 30 E6 0D34 64 SNS STAT6,X'E6' SENSE DAP
CA7A 3D 00 0D34 65 FORCE CLI STAT6,*- DID DAR FORCE CORPECT ADDR.
CA7E F2 81 09 66 JE GETIN
CA81 C0 87 0222 67 B HALT DAR WRONG HALT
CA85 E061 0A86 68 DC XL2'E061'
CA87 F2 87 E9 69 J GAWAN

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E043 5203 CYCLE STEAL & HAMMER ADDRESSING TESTS

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
      70 GETIN SNS STAT2,X'E2' SENSE TIMING BYTES
      71 TBN STAT2,B'10000' PC1 ON
      72 JT CHPC2
      73 B HALT PC1 NOT ON AFTER BLANK FIELD
CA9A 74 DC XL2'E062' ERR HALT
      75 J GAWAN
      76 CHPC2 TBF STAT2,B'1000' PC2 OFF
      77 JT CHPC3
      78 B HALT PC2 NOT OFF AFTER BLANK FIELD
CAAA 79 DC XL2'E063' ERR HALT
      80 J GAWAN
      81 CHPC3 TBF STAT2,B'100' PC3 OFF
      82 JT CHHSL
      83 B HALT PC3 NOT OFF AFTER BLANK FIELD
CABA 84 DC XL2'E064' ERR HALT
      85 J GAWAN
      86 CHHSL TBF STAT2,B'10' HAMR.SET LATCH OFF
      87 JT UPCPP
      88 B HALT
CACA 89 DC XL2'E065' HAMR.SET LATCH ON AFTER BLANK FIELD
      90 J GAWAN ERR HALT
     91 *****
     92 * ISSUE PRINT AND SPACE WITH UNPRINTABLE DATA FIELD *
     93 *****
CACE 3C FF 08FF 94 UPCPP MVI PRDAT,X'FF' INSERT AN UNPRTABLE CHAR.
CAD2 0C 83 08FE 08FF 95 MVC PRDAT-1(132),PRDAT FILL PRINAREA WITH U.P.C.
CAD8 C0 87 0C59 96 B XIO ISSUE A PRINT & SPACE
CADC E201 0ADD 97 DC XL2'E201'
CADE 30 E2 0D32 98 SNS STAT2,X'E2' SENSE TIMING BYTES
CAE2 38 10 0D32 99 TBN STAT2,B'10000' PC1 ON
CAE6 F2 10 09 100 JT CKPC2
CAE9 C0 87 0222 101 B HALT PC1 NOT ON AFTER UPC FIELD
CAED E066 0AEE 102 DC XL2'E066' ERR HALT
CAEF F2 87 81 103 J GAWAN
CAF2 38 08 0D32 104 CKPC2 TBN STAT2,B'1000' PC2 ON
CAF6 F2 10 09 105 JT CKPC3
CAF9 C0 87 0222 106 B HALT PC2 NOT ON AFTER UPC FIELD
CAFD E067 0AFE 107 DC XL2'E067' ERR HALT
CAFF F2 87 71 108 J GAWAN
CB02 39 04 0D32 109 CKPC3 TBF STAT2,B'100' PC3 OFF
CB06 F2 10 09 110 JT CKHSL
CB09 C0 87 0222 111 B HALT PC3 ON AFTER UPC FIELD
CB0D E068 0BOE 112 DC XL2'E068' ERR HALT
CB0F F2 87 61 113 J GAWAN
CB12 39 02 0D32 114 CKHSL TBF STAT2,B'10' HAMR.SET LATCH OF
CB16 F2 10 09 115 JT GUDPP
CB19 C0 87 0222 116 B HALT
CB1D E069 0BE1 117 DC XL2'E069' HAMR.SET LATCH ON AFTER UPC FIELD
CB1F F2 87 51 118 J GAWAN ERR HALT
     119 *****
     120 * ISSUE A PRINT AND SPACE WITH PRINTABLE DATA FIELD *
     121 *****
CB22 3C C8 08FF 122 GUDPP MVI PRDAT,C'H' INSERT AN'H'
CB26 0C 83 08FE 08FF 123 MVC PRDAT-1(132),PRDAT PROPAGATE IT
CB2C C0 87 0C59 124 B XIO ISSUE A PRINT & SPACE
CB30 E201 0B31 125 DC XL2'E201'
CB32 30 E2 0D32 126 SNS STAT2,X'E2' SENSE TIMING BYTES
CB36 38 10 0D32 127 TBN STAT2,B'10000' PC1 ON
CB3A F2 10 09 128 JT CHKPC2
CB3D C0 87 0222 129 B HALT PC1 NOT ON AFTER PRTABLE FIELD
CB41 E06A 0B42 130 DC XL2'E06A' ERR HALT
CB43 F2 87 2D 131 J GAWAN
CB46 38 08 0D32 132 CHKPC2 TBN STAT2,B'1000' PC2 ON
CB4A F2 10 09 133 JT CHKPC3
CB4D C0 87 0222 134 B HALT PC2 NOT ON AFTER PRTABLE FIELD
CB51 F06C 0B52 135 DC XL2'E06C' ERR HALT
CB53 F2 87 1D 136 J GAWAN
CB56 38 04 0D32 137 CHKPC3 TBN STAT2,B'100' PC3 ON

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ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0B5A F2 10 09	138	JT	CHKHSL
0B5D C0 87 0222	139	B	HALT
0B61 E06E	140	DC	XL2'E06E'
0B63 F2 87 0D	141	J	GAWAN
0B66 38 02 0D32	142	CHKHSL TBN	STAT2,B'10'
0B6A F2 10 06	143	JT	GAWAN
0B6D C0 87 0222	144	B	HALT
0B71 E06F	145	DC	XL2'E06F'
0B73 0E 00 0D37 0CE2	146	GAWAN ALC	LPOUNT(1),ONE
0B79 C0 87 0212	147	B	TEST
0B7D 3D 14 0D37	148	CLI	LPOUNT,X'14'
0B81 C0 82 0A41	149	BL	KZANGO
0B85 C0 87 0216	150	B	LINK
	151		GEDOUT
	152		*****
	153	*	WAIT FOR M4 THEN DELAY SUBROUTINE
	154		*****
0B89 34 08 0BB6	155	M4DEL ST	HEXIT+3,ARR
0B8D 30 E2 0D32	156	MITEG SNS	STAT2,X'E2'
0B91 38 01 0D32	157	TBN	STAT2,B'1'
0B95 C0 90 0B8D	158	BF	MITEG
0B99 3C 28 0D39	159	MVI	MSECS,X'28'
0B9D 0D FF 0800 0800	160	WAT CLC	LPI(256),LPI
0BA3 0D 3B 0800 0800	161	CLC	LPI(60),LPI
0BA9 0F 00 0D39 0CE2	162	SLC	MSECS(1),ONE
0BAF C0 84 0B9D	163	BH	WAT
0BB3 C0 87 0000	164	HEXIT B	**
	165		RETURN
	166		*****
	167	*	ROUTINE 2 - HAMMER ADDRESSING TEST
	168		*****
	169	*	ROUTINE 2 - HAMMER ADDRESSING TEST
	170		*****
0BB7 02	171	RTN2 DC	XL1'2'
0BB8 00	172	DC	XL1'0'
0BB9 FFFF	173		LAST ROUTINE
	174		*****
0BBF 30 87 0208	175	TBN	SBYTE0,SSW05
0BC2 C0 87 021A	176	JF	RETIO
0BC6 42	177	B	PRINT
0BC7 10	178	DC	XL1'42'
0BC8 0D11	179	DC	IL1'16'
0BCA E000	180	DC	AL2(TITL2)
0BCC C1 E0 0BD3	181	DC	XL2'E000'
0BD0 F2 87 14	182	RETIO TIO	TRPAB,NRDY
0BD3 38 04 0208	183	J	LANE
0BD7 F2 90 0A	184	TRPAB TBN	SBYTE0,SSW05
0BDA C0 87 021A	185	JF	MHALT
0BDE 41	186	B	PRINT
0BDF 1F	187	DC	XL1'41'
0BE0 0D30	188	DC	IL1'31'
0BE2 E0E1	189	DC	AL2(MAKADY)
0BE4 F0 7C 03	190	DC	XL2'E0E1'
0BE7 3C 03 0D37	191	MHALT HPL	X'03',X'7C'
0BEB C2 02 FFE8	192	LANE MVI	LPOUNT,3
0BEF 39 06 0A0C	193	LANEG LA	NEG24,XR2
0BF3 F2 10 0F	194	TBF	SPUDT,B'110'
0BF6 C2 02 FFE2	195	JT	FOUNT
0BFA 38 04 0A0C	196	LA	NEG30,XR2
0BFE F2 10 04	197	TBN	SPUDT,B'100'
0C01 C2 02 FFDF	198	JT	FOUNT
0C05 C2 01 087F	199	LA	NEG33,XR2
0C09 4C 03 00 0CEE	200	FOUNT LA	LPD+3,XR1
0C0E C0 87 0C59	201	ZIPIT MVC	0(4,XR1),EXES
0C12 E201	202	B	XIO
0C14 C0 87 0212	203	DC	XL2'E201'
0C18 D2 01 04	204	B	TEST
	205	LA	4(,XR1),XR1

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ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0C1B 36 02 0CE2	206	A	ONE,XR2
0C1F C0 01 0C09	207	BNZ	ZIPIT
0C23 0F 00 0D37 0CE2	208	SLC	LPOUNT(1),ONE
0C29 C0 C1 0BEB	209	BNZ	LANEG
0C2D C0 87 0216	210	B	LINK
	211		GEDOUT
	212		*****
	213	*	CHECK FOR BUSY & DELAY SUBROUTINE
	214		*****
	215		*****
0C31 34 08 0C58	216	BROUT ST	BSEXIT+3,ARR
0C35 0C 02 0D3C 0CF1	217	SDC MVC	BUSUB(3),BUSCTI
0C3B 0F 02 0D3C 0CE2	218	FLOOP SLC	BUSUB(3),ONE
0C41 F2 81 07	219	JZ	TOLONG
0C44 C1 E6 0C3B	220	TIO	FLOOP,BUSY
0C48 F2 87 0A	221	J	BSEXIT
0C4B C0 87 0222	222	TOLONG B	HALT
0C4F E011	223	DC	XL2'E011'
0C51 C0 87 0C35	224	B	SDC
0C55 C0 87 0000	225	BSEXIT B	**
	226		*****
	227	*	EXECUTE SIO SUBROUTINE
	228		*****
0C59 31 E6 0CF6	229	XIO LIO	LPDADR,LPDAR
0C5D 36 08 0CE2	230	NEXIO A	ONE,ARR
0C61 34 08 0C97	231	ST	LDCMD+5,ARR
0C65 36 08 0CE2	232	A	ONE,ARR
0C69 34 08 0CDA	233	ST	EXIT+3,ARR
0C6D 34 01 0CDC	234	ST	SAVWUN,XR1
0C71 34 02 0CDE	235	ST	SAVTUU,XR2
0C75 C1 E0 0C7C	236	TIOCHK TIO	ERNRDY,NRDY
0C79 F2 87 0A	237	J	TIOOK
0C7C C0 87 0222	238	ERNRDY B	HALT
0C80 E010	239	DC	XL2'EC10'
0C82 C0 87 0C75	240	B	TIOCHK
0C86 C0 87 0C31	241	TIOOK B	BROUT
0C8A 31 E0 0CEA	242	LIO	FOLG,LOFOLG
0C8E 31 E4 0CE4	243	LIO	LPIADR,LPIAR
0C92 0C 01 0CAB 0000	244	LDCMD MVC	CHND+2(2),**
0C98 38 80 0209	245	TBN	SBYTE1,SSW08
0C9C F2 90 04	246	JP	NOTRIT
0C9F 3A 08 0CAA	247	SBN	CHND+1,B'1000'
0CA3 0C 01 0D36 0CAB	248	NOTRIT MVC	ERT1(2),CHND+2
0CA9 F3 00 00	249	CHND SIO	X'0',X'0'
0CAC C1 E6 0CB6	250	TIO	ISBUSY,BUSY
0CAB C0 87 0222	251	B	HALT
0CB4 E016	252	DC	XL2'E016'
0CB6 35 02 0CE0	253	ISBUSY L	ZERO,XR2
0CBA C1 E2 0CC1	254	DELAY TIO	BSYLP,PBBUSY
0CBE F2 87 0E	255	J	XIOEXT
0CC1 36 02 0CE2	256	BSYLP A	ONE,XR2
0CC5 C0 01 0CBA	257	BNZ	DELAY
0CC9 C0 87 0222	258	B	HALT
0CCD E012	259	DC	XL2'EO12'
0CCF 35 01 0CDC	260	XIOEXT L	SAVWUN,XR1
0CD3 35 02 0CDE	261	L	SAVTUU,XR2
0CD7 C0 87 0000	262	EXIT B	**
0CDB 0000	263	SAVWUN DC	IL2'0'
0CDD 0000	264	SAVTUU DC	IL2'0'
	265		*****
	266		*****
	267	*	CONSTANTS
	268		*****
0CDF 0000	269	ZERO DC	IL2'0'
0CE1 0001	270	ONE DC	IL2'1'
0CE3 0800	271	LPIADR DC	XL2'800'
0CE5 087C	272	LPDADR DC	XL2'87C'
0CE7 0870	273	WRDADR DC	XL2'0870'

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
0CE9 7070                CCEA 274 FOLG DC XL2'7070'          FORM LENGTH 112
0CEB E7E7E7E7          CCEE 275 EXES DC CL4'XXXX'
0CEP 040000            OCF1 276 BUSCTI DC XL3'40000'
277 *****
278 * PRINTOUTS *
279 *****
0CF2 C3E8C3D3C540E2E3 0D01 280 TITL1 DC CL16'CYCLE STEAL TEST'
0CFA C5C1D340E3C5E2E3 280
0D02 C8C1D4D4C5D940C1 0D11 281 TITL2 DC CL16'HAMMER ADDR. TEST'
0D0A C4C4D94BE3C5E2E3 281
0D12 D4C1D2C540F5F2F0 0D21 282 DC CL16'MAKE 5203 READY,'
0D1A F34CD9C5C1C4E86B 282
0D22 E3C8C5D540D9C5E2 0D30 283 MAKADY DC CL15'THEN RESET HALT'
0D2A C5E340C8C1D3E3 283
284 *****
285 * RESERVED STORAGE *
286 *****
0D31 0000            0D32 287 STAT2 DC XL2'0'
0D33 0000            0D34 288 STAT6 DC XL2'0'
0D35                0D36 289 ERT1 DS CL2
0D37                0D37 290 LPOUNT DS CL1
0D38                0D39 291 MSECS DS CL2
0D3A                0D3C 292 BUSUB DS CL3
293 *****
294 * EQUATES *
295 *****
FFE8 296 NEG24 EQU -24
FFE2 297 NEG30 EQU -30
FFDF 298 NEG33 EQU -33
08FF 299 PRDAT EQU X'08FF'
0008 300 ARR EQU X'08' ADDRESS RECALL REGISTER
0001 301 XF1 EQU 1 INDEX REGISTER 1
0002 302 XR2 EQU 2 INDEX REGISTER 2
0800 303 LPI EQU X'800' LINE PRINTER IMAGE AREA
087C 304 LPD EQU X'87C' LINE PRINTER DATA AREA
00E0 305 LOFOLG EQU X'E0'
0CE4 306 LPIAR EQU X'E4'
0CE6 307 LPDAR EQU X'E6'
0216 308 LINK EQU X'216' ENTRY TO DCP CHAIN ROUTINE
0212 309 TEST EQU X'212' ENTRY TO DCP READ DATA SW'S ROUT.
021A 310 PRINT EQU X'21A' ENTRY TO DCP PRINT ROUTINE
0222 311 HALT EQU X'222' ENTRY TO DCP ERROR HALT ROUTINE
0CEC 312 NRDY EQU X'E0'
0CE6 313 BUSY EQU X'E6' PRINTER BUSY
00E2 314 PBBUSY EQU X'E2' BUFFER BUSY
315 * SENSE SWITCH EQUATES
0208 316 SBYTE0 EQU X'208' DCP SENSE SWITCH AREA
0209 317 SPYTE1 EQU X'209' DCP SENSE SWITCH AREA
318 * CONTROL PGM SENSE SWITCHES
0004 319 SSW05 EQU X'04' PRINT MESSAGES ON MPCU
0080 320 SSW08 EQU X'8C' USE 5203 RIGHT CARR.
321 TREP
322 ***** SECTION E04 ***** -NOTE- *****
323 *****
324 TREP
325 * ROUT.01 - CYCLE STEAL TEST * BEFORE RUNNING THIS TEST, THE
326 *ALTERNATE*
327 TREP
328 * ROUT.02 - HAMMER ADDR. TEST * PRINTER SHOULD BE READY, IF
329 * ALTERNATE*
330 TREP
331 *
332 *SSW-05 ON.*
333 TREP
334 *****
335 *****
336 TREP
337 *

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338 * *
339 TREP
340 * THE C.E. SWITCH, TO OVERRIDE IDLE CONTROL, MUST BE ON PRIOR TO RUNNING
341 *PROGRAM *
342 TREP
343 *
344 *
345 TREP
346 *****
347 *****
FFFF 348 END

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E043 5203 CYCLE STEAL & HAMMER ADDRESSING TESTS

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
APR	C	001	0008	0390	0155 0216 0230* 0231 0232* 0233
BAPRT	A	004	0A29	0038	0036
BROUT	A	004	0C31	0216	0241
BSEXIT	A	004	0C55	0225	0216* 0221
BSYLP	A	004	0CC1	0256	0254
BUSCTI	A	003	0CF1	0276	0217
BUSUB	A	003	0D3C	0292	0217* 0218*
BUSY	C	001	00E6	0313	0220 0250
CHHSL	A	004	0ABE	0086	0082
CHKHSL	A	004	0B66	0142	0138
CHKPC2	A	004	0B46	0132	0128
CHKPC3	A	004	0B56	0137	0133
CHPC2	A	004	0A9E	0076	0072
CHPC3	A	004	0AAE	0081	0077
CKHSL	A	004	0B12	0114	0110
CKPC2	A	004	0AF2	0104	0100
CKPC3	A	004	0B02	0109	0105
CMND	A	003	0CA9	0249	0244* 0247* 0248
DELAY	A	004	0CBA	0254	0257
ERNRDI	A	004	0C7C	0238	0236
ERT1	A	002	0D36	0289	0018 0248*
EXES	A	004	0CEE	0275	0201
EXIT	A	004	0CD7	0262	0233*
FLOOP	A	006	0C3B	0218	0220
FOLG	A	002	0CEA	0274	0242
FORCE	A	004	0A7A	0065	0051* 0059*
FOUNIT	A	004	0C05	0200	0195 0198
GAWAN	A	006	0B73	0146	0069 0075 0080 0085 0090 0103 0108 0113 0118 0131 0136 0141
GETIM	A	004	0A8A	0170	0066
GUDPP	A	004	0B22	0122	0115
HALT	C	001	0222	0311	0067 0073 0078 0083 0088 0101 0106 0111 0116 0129 0134 0139
ISBUSY	A	004	0CB6	0253	0250
KZANGO	A	004	0A41	0050	0149
LANE	A	004	0BE7	0192	0183
LANEG	A	004	0BEB	0193	0209
LDCMD	A	006	0C92	0244	0231*
LINK	C	001	0216	0308	0150 0210
LOBLNK	A	004	0A66	0060	0056
LOFJLG	C	001	00E0	0305	0242*
LPD	C	001	0B7C	0304	0200
LPDADR	A	002	0CE6	0272	0229
LPDAR	C	001	00E6	0307	0050* 0229*
LPI	C	001	0B00	0303	0160 0161 0161
LPIADR	A	002	0CE4	0271	0243
LPIAR	C	001	00E4	0306	0243*
LPOUNT	A	001	0D37	0290	0046* 0146* 0148 0192* 0208*
MAKADY	A	015	0D30	0283	0043 0189
MAXIT	A	004	0BB3	0164	0155*
MHALT	A	003	0BE4	0191	0185
MITEG	A	004	0B8D	0156	0158
MHALT	A	003	0A3A	0045	0039
MSECS	A	002	0D39	0291	0159* 0162*
M4DEL	A	004	0B89	0155	0058
NEG24	C	001	FFE8	0296	0193
NEG30	C	001	FFE2	0297	0196
NEG33	C	001	FFDF	0298	0199
NEXIO	A	004	0C5D	0230	0062
NOTRIT	A	006	0CA3	0248	0246
NRDY	C	001	00E0	0312	0036 0182 0236
NPTIO	A	004	0A22	0036	0030
ONE	A	002	0CE2	0270	0146 0162 0206 0208 0218 0230 0232 0256
PSBUSY	C	001	00E2	0314	0254
PRDAT	C	001	0BFF	0299	0060* 0061 0061* 0094* 0095 0095* 0122* 0123 0123*
PPOINT	C	001	021A	0310	0031 0040 0177 0186

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CROSS-REFEREENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
RETIO	A	004	0BCC	0182	0176
RTN1	A	001	0ACD	0025	0017
RTN2	A	001	0BB7	0171	0027
SAVTOU	A	002	0CDE	0264	0235* 0261
SAVMUN	A	002	0CDC	0263	0234* 0260
SBYTE0	C	001	0208	0316	0029 0038 0175 0184
SBYTE1	C	001	0209	0317	0245
SDC	A	006	0C35	0217	0224
SPOUR	A	004	0A62	0059	0057
SPUDT	A	003	0A0C	0019	0052 0194 0197
SSW05	C	001	0004	0319	0029 0038 0175 0184
SSW08	C	001	0080	0320	0245
STAT2	A	002	0D32	0287	0054* 0055 0070* 0071 0076 0081 0086 0098* 0099 0104 0109 0114
STAT6	A	002	0D34	0288	0126* 0127 0132 0137 0142 0156* 0157
SUNEPD	A	004	0A5E	0058	0064* 0065
TEST	C	001	0212	0309	0147 0204
TIOCHK	A	004	0C75	0236	0240
TIOOK	A	004	0C86	0241	0237
TITL1	A	016	0D01	0280	0034
TITL2	A	016	0D11	0281	0180
TOGOON	A	004	0A3D	0046	0037
TOLONG	A	004	0C4B	0222	0219
TRPAB	A	004	0BD3	0184	0182
UPCPF	A	004	0ACE	0094	0087
UVWXYZ	A	001	0A00	0004	
WAT	A	006	0B9D	0160	0163
WRDADR	A	002	0CE8	0273	0050
XIO	A	004	0C59	0229	0096 0124 0202
XIOEXT	A	004	0CCF	0260	0255
XR1	C	001	0001	0301	0200* 0201 0205 0205* 0234 0260*
XR2	C	001	0002	0302	0193* 0196* 0199* 0206* 0235 0253* 0256* 0261*
ZEPO	A	002	0CE0	0269	0253
ZIPIT	A	005	0C09	0201	0207

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

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OBJECT CARD LISTING

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
GBK GBD PN 25	89956 EC 572259	PRINTER CYCLE ST	EAL & HMR ADDR	84228422	E0430000
T+-Y:8D & 5-4	((>AG D B**8A H	H@Z HCH*BFUH&C&G	-<G-BSX2/1&8A H	H@Z H0H*BFUD~CLC	-8~EZ<E0430001
T+-Z5~<@ 47<;Q	<:C1"BX%9< Y<@/	+<+H(<T-BCLG2D ?	2/CL /C>I  G0H;31	B @<-0T=B "/01	)8-D N78E0430002
T+-D0<+Q((C4 CLL	2-6X /OHS8FG2/=U	08-42+A (<?H&B*B	G S.-0?HG5LUHCL.	2D X /OHS8F 2/@H	9A 4 M-0E0430003
T+.,,<?H&B*BG S.	-P HG_LUBCL.2D X	/OHS8FP2/:M@MCT	"CH<H"-T*OH*<O;H	A<+H(<T-&CL.2D X	/OH 3S-E0430004
T+-XHH>AW@Y;A+	(<?H&B*BG S.-P"H	G*LUCL.2D X /OH	S8PT2/6D9 -42@/	IOH*BH>AZ@Y)J <-	H"00 C9ME0430005
T+_/ -0T=B "/C1	R8-D08-42+A (<?H	&B*BG S.-E?HG.L-	HCL.2D X /OHS8F3	2/148A 42@/ IOH*	BH> M.<E0430006
T+>*\$?HGCL-BCL.	2D \$ /OHS8F@+ 4	7C+./CHK J& (@B	BBUG /CHO (-._TC	SCLH8 6420I .TLO	YCLU -,4E0430007
T+-?PC~@H - CL%	H - CO (+E?SOH&	.X*BG B ""+&	BB H&B%BG /4BD 4	J8 C@8 ?L@Y*M+ &	BB H :2UEC430008
T+-OKU /, /OHE&J@	(<+C/@GOC  (<(@H	B"=-9A-Y<@/ 10-	"8T-DE-32D LB ?#	-0-DH-40C 3>0H*	<O;H ;IDE0430009
T+-1 (*EG /.K &E	E -3S) D<B&@ CL*	<8% AB=? /OHO (-	<O 0BCL0<@&@BCL0	<87HAA@GWCC?2/0,	/OH 70@E0430010
T+-2HH> JOH*(<*B	G 19-3W (--<8T&	HCI*6B 3S  -<6TE	AC(04 -3;0; <- H	GB%BG S.-D<BGC&P	/00 4AHE0430011
T+-3C<LG-C+Y19 3	UC D<D0 +H BB~H	EACYHCY< 646CH?	3 CA9-260H*BH>	0(EH<8<GSC<G2/08	6 -C "BQF0430012
T+-3=8% AC., /OH	S8AH5 63*(6H<7%B	G	BGOH*GAC9=-X90&	< Y0 E&+.T1*G	LE+< 13QE0430013
T(6441;.T2<GH<P	RE<GD1{V.8@PS8*L	A4%N 1-.0@4CR1*G	D:P?T2<PN&(XE8XP	TE<TA4=<	NEUE0430014
***** SECTIO	N E04 *****	*****	** -NOTE- ****	*****	E0430015
* ROUT.01 - CYCL	E STEAL TEST	* BEFORE	RUNNING THIS TES	T,THE ALTERNATE*	E0430016
* ROUT.02 - HAMM	ER ADDR. TEST	* PRINTER	SHOULD BE READY	, IF ALTERNATE *	E0430017
*****	*****	* PRINTER	IS AVAILABLE, A	ND SSW-05 ON. *	E0430018
*****	*****	*****	*****	*****	E0430019
*****	*****	*****	*****	*****	E0430020

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OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
* THE C.E. SWI	TCH,TO OVERRIDE I	DLE CONTROL,MUST	BE ON PRIOR TO	RUNNING PROGRAM*	E0430021
*****	*****	*****	*****	*****	E0430022
*****	*****	*****	*****	*****	E0430023
E"***E7*~DC"PHS	=7H&F    C	P% ASC R A	SO Q	09260630751	20575*\$@E0430024

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E055 DATA AND IMAGE ADDRESS REG. TEST

```

ERR LOC OBJECT CODE  ADDR STMT SOURCE STATEMENT
    OA00
    2 DECK 4
    3 UVWXYZ START X'A00'
    4 *****
    5 * SECTION PREFACE *
    6 *****
    7 * THIS AREA CONTAINS INFORMATION NECESSARY FOR SECTION OPERATION. *
    8 * THE PROGRAM IDENTIFICATION, FLAGS AND FIRST ROUTINE ADDRESS *
    9 * ARE LOADED BY ASSEMBLED DATA. THE CURRENT ROUTINE NUMBER IS *
    10 * SUPPLIED BY THE CONTROL PROGRAM. SECTION UDT ENTRIES ARE *
    11 * DEFINED PARTIALLY BY THE SECTION SO THAT THE CONTROL PROGRAM *
    12 * CAN SUPPLY OPTION BYTES. *
    13 *****
    OA00 E055  OA01 14 DC XL2'E055' PROGRAM IDENTIFICATION
    OA02 00  OA02 15 DC XL1'0' FLAGS
    OA03 01  OA03 16 DC XL1'1' CURRENT ROUTINE NUMBER
    OA04 0000 OA05 17 DC XL2'0' RESERVED
    OA06 0A0D OA07 18 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX
    OA08 15R5 OA09 19 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE
    OA0A E05000 OA0C 20 SPUDT DC XL3'E05000' UNIT DEFINITION TABLE - PRINTER
    21 *****
    22 *
    23 * ROUTINE 1 - DATA ADDRESS INCREMENTING TEST *
    24 *
    25 *****
    OA0D 01  OA0D 26 RTN1 DC XL1'1' ROUTINE NUMBER
    OA0E 00  OA0E 27 DC XL1'0' FLAGS
    OA0F 0FC9 OA10 28 DC AL2(RTN2) ADDRESS OF NEXT ROUTINE PREFIX
    29 *****
    30 TBN SBYTE0,SSW05 PRINT ON MFCU
    31 JF NRTIO
    32 B PRINT PRINT TITLE
    33 DC XL1'42'
    34 DC IL1'18'
    35 DC AL2(TITL1)
    36 DC XL2'E000'
    37 NRTIO TIO BAPRT,NRDY PRINTER READY
    38 J TIPS
    39 BAPRT TBN SBYTE0,SSW05 PRINT ON MFCU SW. ON
    40 JF MRALT
    41 B PRINT
    42 DC XL1'41'
    43 DC IL1'34'
    44 DC AL2(MAKADY)
    45 DC XL2'E0E1'
    46 MRALT HPL X'03',X'7C' HALT E1
    47 TIPS TBN SPUDT,B'100000' THISA 300 LPM PTR.?
    48 JF LOUNT
    49 MVI ININLI+1,X'17'
    50 MVI INCONT+1,X'05'
    51 MVI BESSL1+1,X'08'
    52 MVI M3XT+1,X'81'
    53 MVI M2XT+1,X'81'
    54 MVI MIXT+1,X'81'
    55 *****
    56 * GET HAMMERS INTO PROPER POSITION *
    57 *****
    OA5C 31 E0 14BF
    OA60 31 E4 14B8
    OA64 31 E6 14B0
    OA68 3C 0A 15R3
    OA6C 0C 02 15C1 14AB
    OA72 3B 08 0B59
    OA76 3B 08 0F0D
    OA7A 3B 08 0EA7
    OA7E 3B 08 0E50
    OA82 3B 08 0E20
    OA86 F2 90 10
    OA89 3A 08 0B59
    58 LOUNT LIO FOLG,LOFOLG
    59 LIO LPIADR,LPIAR LOAD LSR ADDRESS REGISTER
    60 LIO LPDADR,LPDAR LOAD DATA ADDR.REG.
    61 MVI LPOUNT,X'0A' LOAD LOOP COUNT OF 10
    62 MVC BADM3(3),ZERO ZERO ERR COUNTERS
    63 TOG00N SBF DACMD+1,B'1000' SET MOD.BIT OFF
    64 SBF DACMD+1,B'1000' SET MOD.BIT OFF
    65 SBF DACMD2+1,B'1000' SET MOD.BIT OFF
    66 SBF DACMD3+1,B'1000' SET MOD.BIT OFF
    67 TBN SBYTE1,SSW08 PRINT ON RIGHT CARR.
    68 JF MOVHAM
    69 SBN DACMD+1,B'1000' SET MOD.BIT ON
  
```

E055 DATA AND IMAGE ADDRESS REG. TEST

```

ERR LOC OBJECT CODE  ADDR STMT SOURCE STATEMENT
    OA8D 3A 08 0F0D 70 SBN DACMD1+1,B'1000' SET MOD.BIT ON
    OA91 3A 08 0EA7 71 SBN DACMD2+1,B'1000' SET MOD.BIT ON
    OA95 3A 08 0E5D 72 SBN DACMD3+1,B'1000' SET MOD.BIT ON
    OA99 3C 7F 0AEF 73 MOVHAM MVI ZPRUNY+1,X'7F'
    OA9D 38 80 020C 74 TBN SBYTE4,SSW20 OPTION 1 ON?
    OAA1 F2 10 06 75 JT DUST
    OAA4 C0 87 1411 76 B XIO PRINT BLANKS
    OAA8 E200 0AA9 77 DC XL2'E200'
    OAAA 39 30 0A0C 78 DUST TBF SPUDT,B'110000' 100 LPM PRINTER?
    OAAE F2 90 12 79 JF SI0ST
    OAB1 3C 7C 0AEF 80 MVI ZPRUNY+1,X'7C'
    OAB5 38 80 020C 81 TBN SBYTE4,SSW20 OPTION 1 ON
    OAB9 F2 10 23 82 JT NEVES
    OABC C0 87 0F9B 83 B M4DEL WAIT FOR M4 AND DELAY
    OAC0 F2 87 20 84 J GRADAR
    OAC3 30 E2 15A9 85 SI0ST SNS STAT2,X'E2' SENSE THE TIMINGS
    OAC7 38 01 15A9 86 TBN STAT2,B'1' ARE HMRS.IN POS. 4
    OACB F2 10 15 87 JT GRADAR
    OACE 38 80 020C 88 TBN SBYTE4,SSW20 LPDAR OPTION 1 ON
    OAD2 F2 10 0A 89 JT NEVES
    OAD5 C0 87 1411 90 B XIO PRINT A BLANK LINE
    OAD9 E200 0ADA 91 DC XL2'E200'
    OADB C0 87 0AC3 92 B SI0ST GO CHK.AGAIN
    OADF C0 87 0F63 93 NEVES B CRPAH GO TO CHK.RESET SUBRT.
    94 *****
    95 * CHECK DATA ADDR.REG.FOR CORRECT INITIALIZING *****
    96 *****
    97 GRADAR TBN SBYTE4,SSW20 LPDAR OPTION 1 ON
    98 JT SAWRYT
    99 SNS STAT6,X'E6' SENSE DATA ADDR.
    100 ZPRUNY CLI STAT6,*-* LPDAR AT 7F OR 7C
    101 JE SAWRYT
    102 B HALT
    103 DC XL2'E070' DATA ADDR.DID NOT START
    104 B TOG00N AT 7F HALT
    105 *****
    106 * GENERATE SENSE INSTRUCTIONS *****
    107 *****
    108 SAWRYT MVI STUU,X'00' SET 2ND INDEXED SNS DISPL.TO 0
    109 MVI SWUN,X'19' SET 1ST INDEXED SNS DISPL.TO 25
    110 LA SWUN,XR1 LOAD 1ST INDEXED SNS ADDR.
    111 LA DARS1+2,XR2 LOAD START OF GENERATED FIELD
    112 ADTUU ALC O(1,XR1),TWO ADD 2 TO 1ST INDEXED SNS DISPL.
    113 MVC O(3,XR2),O(1,XR1) PUT INDEXED SNS IN GENERATED FIELD
    114 A TREE,XR2 UPDATE GEN.FIELD ADDR.BY 3
    115 CLI O(,XR1),X'FF' 1ST INDEXED SNS DISPL.UP TO 255
    116 BL ADTUU IF NOT,GC DO ANOTHER
    117 LA STUU,XR1 LOAD 2ND INDEXED SNS ADDR.
    118 ADTUTU ALC O(1,XR1),TWO ADD 2 TO 2ND INDEXED SNS DISPL.
    119 MVC O(3,XR2),O(1,XR1) PUT INDEXED SNS IN GEN. FIELD
    120 A TREE,XR2 UPDATE GEN.FIELD ADDR.BY 3
    121 CLI O(,XR1),X'6E' 2ND INDEXED SNS DISPL.UP TO 110
    122 BL ADTUTU IF NOT DO ANOTHER
    123 *****
    124 * WAIT FOR HOME LATCH,THEN ISSUE PRINT&SPACE *****
    125 *****
    126 LA HML00P,XR1 LOAD 1 FOR A BASE
    127 LA DARS2-1,XR2 LOAD 2 FOR A 2ND BASE
    128 SAN SNS STAT2,X'E2' GRAB TIMINGS
    129 TBN STAT2-1,B'10000' PSS-1 ON ?
    130 BF SAN
    131 HML00P SNS 16(,XR1),X'E2' GRAB SENSE SYNC ON HOME LATCH
    132 TBN 15(,XR1),B'1' HOME LATCH UP 18.24 USEC.LOOP
    133 BF O(,XR1) LOOP IF NOT
    134 DACMD SIO X'01',X'E2' PRINT AND SPACE
    135 J DARS1 GO SAMPLE
    136 DC XL2'0' SENSE AREA
    137 SNS 16(,XR1),X'E2'
    OAE3 38 80 020C
    OAE7 F2 10 15
    OAEA 30 E6 15AD
    OAEF 3D 00 15AD
    OAF2 F2 81 0A
    OAF5 C0 87 0222
    OAF9 E070
    OAFB C0 87 0A72
    OAFF 3C 00 14C5
    OB03 3C 19 14C2
    OB07 C2 01 14C2
    OB0B C2 02 0B68
    OB0F 4E 00 00 14AF
    OB14 9C 02 00 00
    OB18 36 02 14B1
    OB1C 7D FF 00
    OB1F C0 82 0B0F
    OB23 C2 01 14C5
    OB27 4E 00 00 14AF
    OB2C 9C 02 00 00
    OB30 36 02 14B1
    OB34 7D 6E 00
    OB37 C0 82 0B27
    OB3B C2 01 0B4F
    OB3F C2 02 0C4E
    OB43 30 E2 15A9
    OB47 38 10 15AB
    OB4B C0 90 0B43
    OB4F 70 E2 10
    OB52 78 01 0F
    OB55 00 90 00
    OB58 F3 E2 01
    OB5B F2 87 0B
    OB5E 0000
    OB60 70 E2 10
  
```

E055 DATA AND IMAGE ADDRESS REG. TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for M4 and M3 hammer position checks.

E055 DATA AND IMAGE ADDRESS REG. TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for M4 and M2 hammer position checks.





E055 DATA AND IMAGE ADDRESS REG. TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
1098	3C 10 14C8	410	MVI	IWUN,X'10'
109C	C2 01 14C8	411	LA	IWUN,XR1
10A0	C2 02 10FF	412	LA	IARS1+2,XR2
10A4	4E 00 00 14AF	413	UUTDA	ALC O(1,XR1),TWO
10A9	9C 02 00 00	414	MVC	O(3,XR2),O(,XR1)
10AD	36 02 14B1	415	A	TREE,XR2
10B1	7D FE 00	416	CLI	O(,XR1),X'FE'
10B4	C0 82 10A4	417	BL	UUTDA
10B8	C2 01 14CB	418	LA	ITUU,XR1
10BC	4E 00 00 14AF	419	UTUTDA	ALC O(1,XR1),TWO
10C1	9C 02 00 00	420	MVC	O(3,XR2),O(,XR1)
10C5	36 02 14B1	421	A	TREE,XR2
10C9	7D 78 00	422	CLI	O(,XR1),X'78'
10CC	C0 82 10BC	423	BL	UTUTDA
*****				
424				*****
425				*****
426				*****
10D0	31 F4 14BB	427	LIO	LPIADR,LPIAR
10D4	3C FF 087F	428	MVI	LPD+3,X'FF'
10D8	C2 01 10EC	429	LA	POOLMH,XR1
10DC	C2 02 11EC	430	LA	IARS2+1,XR2
10E0	30 E2 15A9	431	NAS	SNS STAT2,X'E2'
10E4	38 10 15A8	432	TBN	STAT2-1,B'10000'
10E8	C0 90 10E0	433	BF	NAS
10EC	70 E2 10	434	POOLMH	SNS 16(,XR1),X'E2'
10EF	78 01 0F	435	TBN	15(,XR1),B'1'
10F2	D0 90 00	436	BF	O(,XR1)
10F5	F3 E2 01	437	IACMD	SIO X'01',X'E2'
10F8	D0 87 11	438	B	17(,XR1)
10FB	0000	10FC	DC	XL2'0'
*****				
440				*****
441				*****
442				*****
10FD		10FD	443	IARS1 EQU *
11EA		11EA	444	DS CL238
11EB		11EB	445	IARS2 EQU *
1250		1250	446	DS CL102
1251		1318	447	DS CL200
1319	3C 40 087F	448	MVI	LPD+3,X'40'
131D	3C 28 13B8	449	MVI	DUNAL+1,X'28'
1321	C2 01 14F0	450	LA	PS148-1,XR1
1325	30 E3 15AB	451	SNS	STAT3,X'E3'
1329	38 04 15AB	452	TBN	STAT3,B'100'
132D	F2 10 08	453	JT	SKUCS
1330	C2 01 1512	454	LA	PS1UCS-1,XR1
1334	3C 58 13B8	455	MVI	DUNAL+1,X'58'
1338	C2 02 10FA	456	SKUCS	LA IARS1-3,XR2
133C	3C 00 15B0	457	INILI	MVI SAMLIM,*-*
1340	36 02 14AF	458	UPTWO	A TWO,XR2
1344	BD 02 02	459	CLI	2(,XR2),X'02'
1347	F2 81 13	460	JE	ITZRD
134A	0F 00 15B0 14AD	461	SLC	SAMLIM(1),ONE
1350	C0 01 1340	462	BNZ	UPTWO
1354	C0 87 0222	463	B	HALT
1358	E076	1359	DC	XL2'E076'
135A	F2 87 65	465	J	NUSAM
135D	3C 00 1371	466	ITZRD	MVI CHKINC+2,X'00'
1361	3C 00 15B0	467	ICTAB	MVI SAMLIM,*-*
1365	0E 00 1371 14AD	468	ALC	CHKINC+2(1),ONE
1368	36 02 14AF	469	ROGAN	A TWO,XR2
136F	6D 00 00 00	470	CHKINC	CLC O(1,XR1),O(,XR2)
1373	F2 81 13	471	JE	ITSOK
1376	0F 00 15B0 14AD	472	SLC	SAMLIM(1),ONE
137C	C0 01 1368	473	ROGAN	B
1380	C0 87 0222	474	B	HALT
1384	E077	1385	DC	XL2'E077'
1386	F2 87 39	476	J	NUSAM
1389	3D 08 1371	477	ITSOK	CLI CHKINC+2,X'08'

E055 DATA AND IMAGE ADDRESS REG. TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
138D	C0 82 1361	478	BL	ICTAB
1391	3C 00 15B0	479	BTSSLI	MVI SAMLIM,*-*
1395	36 01 14B4	480	A	LEVEN,XR1
1399	36 02 14AF	481	NAGOR	A TWO,XR2
139D	6D 00 01 00	482	CLC	I(1,XR1),O(,XK2)
13A1	F2 81 13	483	JE	DUNAL
13A4	0F 00 15B0 14AD	484	SLC	SAMLIM(1),ONE
13AA	C0 01 1399	485	BNZ	NAGOR
13AE	C0 87 0222	486	B	HALT
13B2	E078	13B3	DC	XL2'E078'
13B4	F2 87 08	488	J	NUSAM
13B7	7D 00 00	489	DUNAL	CLI O(,XR1),*-*
13BA	C0 01 135D	490	BNE	ITZRD
13BE	C0 87 0212	491	B	TEST
13C2	35 02 14AB	492	NUSAM	L ZERO,XR2
13C6	C1 E6 13CD	493	BUTIO	TIO BULOP,BUSY
13CA	F2 87 0E	494	J	SICEM
13CD	36 02 14AD	495	BULOP	A ONE,XR2
13D1	C0 01 13C6	496	BNZ	BUTIO
13D5	C0 87 0222	497	B	HALT
13D9	E011	13DA	DC	XL2'E011'
13DB	0F 00 15B3 14AD	499	SICEM	SLC LPOUNT(1),ONE
13E1	C0 01 1071	500	BNZ	SECIT
13F5	C0 87 0216	501	BLINK	B LINK
*****				
502				*****
503				*****
504				*****
505	BROUT ST			BSEXIT+3,ARR
506	SDC MVC			BUSUB(3),BUSCTI
507	FLOOP SLC			BUSUB(3),ONE
508	JZ			TOLONG
509	TIO TIO			FLOOP,BUSY
510	J			BSEXIT
511	TOLONG B			HALT
512	DC	1408		XL2'E011'
513	B			SDC
514	BSEXIT B			*-*
*****				
515				*****
516				*****
517				*****
1411	36 08 14AD	518	XIO	A ONE,ARR
1415	34 08 1443	519	ST	LDCMD+9,ARR
1419	36 08 14AD	520	A	ONE,ARR
141D	34 08 14A4	521	ST	EXIT+3,ARR
1421	34 01 14A6	522	ST	SAVWUN,XR1
1425	34 02 14A8	523	ST	SAVTUU,XR2
1429	C1 E0 1430	524	TIOCHK	TIO ERNRDY,NRDY
142D	F2 87 0A	525	J	LDCMD
1430	C0 87 0222	526	ERNRDY	B HALT
1434	E010	1435	DC	XL2'E010'
1436	C0 87 1429	528	B	TIOCHK
143A	C0 87 13E9	529	LDCMD	B BROUT
143E	0C 01 145B 0000	530	MVC	CMND+2(2),*-*
1444	38 08 145A	531	SBF	CMND+1,B'1000'
1448	38 80 0209	532	TBN	SBYTE1,SSW08
144C	F2 90 04	533	JF	NOTRIT
144F	3A 08 145A	534	SBN	CMND+1,B'1000'
1453	0C 01 15B5 145B	535	NOTRIT	MVC ERT1(2),CMND+2
1459	F3 00 00	536	CMND	SIO X'0',X'0'
145C	C1 E6 1466	537	TIO	ISBUSY,BUSY
1460	C0 87 0222	538	B	HALT
1464	E016	1465	DC	XL2'E016'
1466	35 02 14AB	540	ISBUSY	L ZERO,XR2
146A	C1 E6 1471	541	DELAY	TIO BSYLP,BUSY
146E	F2 87 0E	542	J	XIOEXT
1471	36 02 14AD	543	BSYLP	A ONE,XR2
1475	C0 01 146A	544	BNZ	DELAY
1479	C0 87 0222	545	B	HALT





E055 DATA AND IMAGE ADDRESS REG. TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SDC	A	006	13ED	0506	0515
SECIT	A	004	1071	0396	0500
SENAT	A	004	0FEC	0346	0344
SEXIT	A	004	0F97	0315	0301*
SICEM	A	006	13DB	0499	0494
SIOST	A	004	0AC3	0085	0079 0092
SKUCS	A	004	133E	0456	0453
SMAD	A	004	0D7D	0156	0160
SPUDT	A	003	0A0C	0020	0047 0078 0199 0375 0396
SSW05	C	001	0004	0649	0030 0039 0302 0349 0358 0367
SSW08	C	001	0080	0650	0067 0391 0532
SSW20	C	001	0080	0652	0074 0081 0088 0097 0201 0209 0293 0341
STAT2	A	002	15A9	0611	0085* 0086 0128* 0129 0205* 0206 0320* 0321 0400* 0401 0431* 0432
STAT3	A	002	15AB	0612	0346* 0347 0451* 0452
STAT6	A	002	15AD	0613	0099* 0100
STRIT	A	004	0E12	0198	0189 0237 0268
STUU	A	003	14C5	0574	0108* 0117
SUBOK	A	004	0DE2	0182	0178
SUSY	A	004	0F46	0291	0280 0285 0287 0291
SWUN	A	003	14C2	0573	0109* 0110
TAW	A	006	0FE1	0311	0314
TECHBI	A	004	0FE4	0347	0345*
TEST	C	001	0212	0639	0292 0491
THCHEK	A	004	0D81	0157	0154* 0155* 0165
TIOCHK	A	004	1429	0524	0528
TIPS	A	004	0A3D	0047	0038
TITL1	A	018	1546	0601	0035
TITL2	A	019	1559	0602	0363
TMM1E	A	004	0F3C	0288	0283
TMM2E	A	004	0EEE	0263	0258
TMM3E	A	004	0E8C	0232	0227
TNUOL	A	004	1050	0387	0366 0380
TOGGGN	A	004	0A72	0063	0104 0163 0176 0181 0234 0265 0290
TOLONG	A	004	1403	0511	0508
TREE	A	002	14B1	0565	0114 0120 0415 0421
TRPAB	A	004	101A	0367	0365
TRAIT	A	004	0EF8	0266	0255 0260 0262 0266
TWLVE	A	002	14B6	0568	0182
TWO	A	002	14AF	0564	0112 0118 0156 0169 0413 0419 0458 0469 0481
TYRWAS	A	004	1094	0409	0399 0402
UCSFLG	C	001	0878	0634	0343
UPTWC	A	004	1340	0458	0462
UTUTDA	A	005	10BC	0419	0423
UUTDA	A	005	10A4	0413	0417
UVWXYZ	A	001	0A00	0003	
WAT	A	006	0FAF	0324	0327
WHARTC	A	004	0E37	0208	0198* 0204 0215
WT	A	006	1483	0548	0551
XIO	A	004	1411	0518	0376 0090 0211 0394 0403
XIOEXT	A	004	147F	0547	
XRI	C	001	0001	0630	0110* 0112 0113 0115 0117* 0118 0119 0121 0126* 0131 0132 0133 0137 0138 0139 0152* 0157 0177 0182* 0184 0188* 0198 0217* 0219 0220 0222 0223 0228 0230 0236* 0241* 0243 0244 0246 0247 0250 0251 0253 0254 0259 0261 0267* 0273* 0275 0276 0278 0279 0284 0286 0411* 0413 0414 0416 0418* 0419 0420 0422 0429* 0434 0435 0436 0438 0450* 0454* 0470 0480* 0482 0489 0522 0552* 0111* 0113 0114* 0119 0120* 0127* 0151* 0156* 0157 0167 0169* 0170 0177 0186* 0190* 0216* 0221 0249* 0252 0272* 0277 0412* 0414 0415* 0420 0421* 0430* 0456* 0458* 0459 0469* 0470 0481* 0482 0492* 0495*
YALD	A	004	0E00	0190	0187
ZERO	A	002	14AB	0562	0062 0186 0492 0540
ZPRUNY	A	004	CAEE	0100	0073* 0080*

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

E055 DATA AND IMAGE ADDRESS REG. TEST

OBJECT CARD LISTING

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS C E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+-Y:8EM & B-4 N;AE D CAUBA H HAZ HOH\*BFUHKEM\$ -<G-BSX2/168A H HAZ HOH\*BFUDSEQ7 -B- ILOE0550001

T+-Z5-<8H Y<AZ QIA>(\*COECR4QB 7 X|HD+ST2AC>0a-2a :< M73GUE.319/K | YN#00BE\*DM3% HB5U LK E0550002

T+-DO+0-|CL#HCD\* #B 9)+H BB-H&DCY HE5U:B @'+--+Z3Y HCV4a-J,?+H BC|H &A%BGEAGS CU0B-3 ZUAH \*18E0550003

T+.,|GOH#3S -3 2DB| /O=\$@Y\*-<+H ND L-AEEX2DAM8- H <a/ HOH\*MD;H OH\* HOaBGC6<8- HCa/ N<+Q EKQE0550004

T+-ZWE#4' AO\_@YD HOH\*BH>A00H\*H\*TO E<M@FJLBO-DM3% BBE\_+ M,90B 6 /K1--a OHM.CaH AE<M #C\*E0550005

T+\_/L- EH=\* - (-HM#P5> <BBB2- B E\_10-HKLTCEEU BDAQYDI .&7CSDG- AC\*BE |IS -HGBO \*+H =E-E0550006

TA\_YDG- DI &DE ..... 4EYE0550007

T+-6/O-H.E#HAE<O @HJ00| (-08 CQ< M,LQBEH' \_' @YD MCO NZAK\_0 DI-\*B G S.-\*\*BGBXH2BAO O|EY &S\*E0550008

T+-7\*CQ| --57. D NZ- @BAOO(-HM,24 AESH @Y&MCO NZAK \_0 DI(\*BG S.-\*ZB GBXH) & <@YDHOH\* BH> #-QE0550009

T+-8P\*@BGBXH6 JK 6| 4N#G5' <ACP< 5 /K,0;Q+ <HACVL 2/1H6 /K\_0 DI(\*B G S.-E<BGC-D4 &B :+L \*SC\*E0550010

T+-9KB-32U @B- H <a/ YOH\*|W@BGC\* 08/OZ+ DND-H&A<B G -8- HCa/ HOH\* MD;H OH\*+<BGC6| /08 #: E0550011

T+-(|@HBCV#B JD #a=HA\*+H ;D BI \*+0 -QH @YDVC- NOJK\_C& NOJKZ@YD <-Q8 @YD&-RY @-\* HOH\* =24E0550012

T+-#H S.-) \*BGBX. A9-:00-D+Y#BGC/. B J09a=HA\*+H ;D OI +DPCS GV <B &C,|B -#A\*+H ;D BI :ZHE0550013

T+-@C GCW G6E |H AI&8 E\* M,64 E\* M#?HACG6J |HADG6 ) |HGBRG S.-) <B GBX.A9-#80-D|A<B GC/H QEH0550014

T+-a=0-H|C@HAE\$ 38-E08-E8 -C-U A 09-E' G2-KM+ AD #EH4( ADME..2-21 'S G2-JA'V G2A0, /OH &DHE0550015

T+-19H>A90H\*H\*%G WC4\$ /OHK+H BC|H &B-a Es<M,\* AB0, /OHDI -|WT-D -T 2U T /OH# L&NT-A @A@D 6,\*E0550016

T+-=49-19|B-N,07 \*B H 4#B H @ EEaM,\*BDC8G /O (-|ZCCSEEU8 JD ZOI |X302EEa(MO- B \*Z E0550017

T+-#?CLXH - CO N,1K\_OHE|, @BG B |H+H BC &D=M \*O/8a-@D|CU|9CC TEE#BAAD,@/ P+ & BB|H 58<E0550018

T+ /DU, /OHEOJY NZ= +OH\*BH> ++ & B8|H&B#BG /ZB01N RB CARA E@Y+6+ & B8|H&B#BG /ZAH/O (8+D 6SDE0550019

T+ /AV@GOC+ B HClH &C30PD34@AJ|S| - LU?HGCCO/D342BAI S| 4LUTG-E.319/K | YN#3%HD|QB- H I@Z 9BQE0550020

T+ /B-ACYHD|S /10 J8- 9< Y<AZ GOH\* |W#HGELCSEEU8 JD Z@/ HOH\*MD;H OH\* &-33=E<@DALHO-D M2<H R,HE0550021

E055 DATA AND IMAGE ADDRESS REG. TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/C\$ /C\*L- EH= \* - (-HM%P7= <B BDHLB JL.L- EH= \* - (-HM%P58 <B BD.019AK#||@H-@H AD+0 N& E0550022

THAC@0-HJ#CCSEEU @DAQY0I @8GCSDG- AC\*B& ||S )BGD& ..... 19UE0550023

T+/(L|D H-30YD#T B JLO<+<ND3-DEE? 2D TB JMK|E-L><H BD|Y@ A00(-HM,#4 B ?HAD0@ E\$ M,\* AD4 J-8E0550024

T+/+OH\*BH>A6@Y) V| L\*LO E\$ + A( 1EH46 /K?S& |H ADO@ E\$ M,\* AD6? /OHS8G-2/3U\*B1( 10HH PROE0550025

T+//ID6D@ A00(-D M\_CQBEM'\_ D @YD LCO NZAK\_O DLW\*B G S.-; |HGB74 < AD57 /OHK(&HMD@G WD@4 \$1 E0550026

T+/@D@Y\*+(-HM,\* AD@ \$ /OHS8AD| AO 3EH7 JA10H\*BET& HEA < /O=E.U| /O =EH72-&-A9/|3@Y\* H0H\* ;/\*E0550027

T+/@ S.-D\*BGD=7 /O (-M,L&HED< 6BAK\_(-MZC&AEHQ 4 /KY0; M<|HGBZB G S.-D<BGBX /1| ZC D @S-E0550028

T+/J:EE% C%HEEY 8- HIAZ D+--MO-0 AE\$MMO\* < <GWEF\$ /OHS8AQ5 /K,0;Q M\*-HGCTQBEM' JJ DOH\* 2 &E0550029

T+/K5 S.-EC2 EE@ (M0- B (+0- B | A07EH7 /AKC(&D MZTMBEHT /O ..... A H 0- BO EH<E0550030

T+/LOC & - BG1 0\*GCWF\$CW GCUD.C U\*X=.V:++?@-L7=? 7BH+|W:;3?@?P8=" #BH;LX:>70@M\$9M| "BG@ \$2ME0550031

T+/M, -YKFSHD -Y KFSHECJM)IK+ECJM )I&-&FB Y -&FB Y OHHD/YSHTH:&UZ KA&4NGKM\_(L5ELNM HDA- #Y%E0550032

T+/NWHB-0+DAHME- C1<GTOMCA1<LRK\*X E14?T1;.T2)LA1@N 0\*LD6M?R1\*).8@P SB'-R1;.S&<|H1\*| K&(U @&OE0550033

T+/O/1;.E86?5@?C 3&(LUB>( 0%N 6\*P A1+/,8@TE5MCR1;. E84CH0)|T2)LA1@N MDCC2<GI5MCD5UC N5>< J2&E0550034

TA1OZ&<GG6\*PE ..... 6DDE0550035

TA/O2 ..... 61&E0550036

TAJD# ..... ;/ME0550037

E\*\*\*+E7\*=-DC\*PH\$ =\*7M&F| | C F% ASC R A SO Q ..... 02350317710 60571@#\*E0550038

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LAST PAGE

DATE	31OCT69	22DEC69	20JAN70	02MAR70	11MAY70	01NOV70	04JUN71	PROG ID	OE05-5
EC NO	816529	816547	816548	816631	816671	816764	818969	PAGE	8

E063 52C3 CHAIN EMITTER TIMING TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

2 DECK 4
3 E06 START X'A00'
4 *****
5 *
6 * SYSTEM/3 52C3 CHAIN EMITTER TIMING TEST *
7 *
8 *****
9 * SECTION 6 - ROUTINE 1 *
10 *****
11 DC XL2'E063' PROG IDENTIFICATION
12 DC XL1'0' FLAGS
13 DC XL1'1' CURRENT ROUTINE NUMBER
14 DC XL2'0' RESERVED
15 DC AL2(RTN1) ADDRESS OF FIRST ROUTINE PREFIX
16 DC AL2(ERT1) ADDRESS OF ERROR RECORDING TABLE
17 SPUDT DC XL3'EC5000' UNIT DEFINITION TABLE - PRINTER
18 *****
19 *
20 * ROUTINE 1 - CHAIN EMITTER TIMING TEST *
21 *
22 *****
23 RTN1 DC XL1'1' ROUTINE NUMBER
24 DC XL1'0' FLAGS
25 DC XL2'FFFF' LAST ROUTINE
26 *****
27 TBN SBYTEC,SSW05 PRINT CN MFCU
28 JT NRTIO
29 B PRINT PRINT TITLE
30 DC XL1'42'
31 DC IL1'25'
32 DC AL2(TITL1)
33 DC XL2'E000'
34 NRTIO TIO BAPRT,NRDY PRINTER READY
35 J NOOGOT
36 BAPRT TBN SBYTEC,SSW05 PRINT ON MFCU SW. ON
37 JF MRALT
38 B PRINT PRINT MAKE PRINTER READY
39 DC XL1'41'
40 DC IL1'31'
41 DC AL2(MAKADY)
42 DC XL2'E0E1'
43 MRALT HPL X'03',X'7C' HALT E1
44 NOOGOT MVI LPOUNT,10
45 TBN SPUDT,B'100000' 100-200 LPM ?
46 JF SNOTRE
47 MVI CEMAX+1,X'1C'
48 MVI ITNAM+1,X'19'
49 MVI MANTI+1,X'19'
50 MVI HMMIN+1,X'08'
51 MVI HMMAX+1,X'0F'
52 MVC GOBAK+3(2),ADFRTY
53 *****
54 * GENERATE THE SENSE INSTRUCTIONS *
55 *****
56 SNOTRE MVI PSECS,X'04' SET 4 MSEC DELAY 1ST TIME THRU
57 MVI TDUNT,8
58 J TOGOON
59 SKGOON ALC MSECS(1),NINE ADD 9 TO MSEC DELAY
60 TOGOON MVC STUU(2),SAMADR LOAD STARTING SENSE ADDR.
61 LA STUU,XR1 LOAD SENSE INSTR.ADDR.
62 LA SENIN+3,XR2 LOAD GEN.FIELD ADDR.
63 ADTUU MVC J(4,XR2),O(1,XR1) PUT SENSE INSTR. IN GEN.FIELD
64 ALC O(2,XR1),ONE ADD 1 TO SENSE INSTR. ADDR.
65 A JOUR,XR UP GEN.FIELD ADDR.BY 4
66 CLC O(2,XR1),LASADR 1100 SENSE INSTR.GENERATED?
67 BNE ADTUU
68 MVC SAMRET(4),BRUNC PUT IN UNC BR
69 B BROUT

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DATE 25AUG69 31OCT69 11MAY70 01NOV70 19FEB71  
 EC NO. 816485 816529 816671 816764 818912

PROG ID OE06-3  
 PAGE 1

E063 52C3 CHAIN EMITTER TIMING TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

70 *****
71 * FIND HOME LATCH, THEN SAMPLE AT 9.12 USEC FOR 10 MSEC *
72 *****
73 SNIK SNS STAT2,X'E2' GRAB THE TIMINGS
74 TBN STAT2-1,B'1' HOME LATCH ON?
75 BF SNIK
76 MVC HCMCNT(1),MSECS SET UP DELAY COUNT
77 TWA CLC LPI(256),LPI 1 MSEC
78 CLC LPI(60),LPI DELAY
79 SLC HCMCNT(1),ONE DECR.DELAY COUNT
80 BH TWA
81 B SENIN GO SAMPLE 1100 BYTES AT 9.12
82 RETURN MVI HCMIN+1,X'30' WIPE HI ADDR. BYTE
83 *****
84 * CHECK TIMING BETWEEN CHAIN EMITTER PULSES *
85 *****
86 LA SENIN,XR1 LCAD ADDR. OF 1ST SAMPLE
87 FIBIOF TBN O(,XR1),B'100000' FIND CHAIN EMITTER OFF
88 JF ENIF
89 A ONE,XR1
90 B FIBIOF
91 ENIF A ONE,XR1 LOOK FOR RISE OF CHAIN EMIT.
92 TBN O(,XR1),B'100000'
93 BF ENIF
94 TBN O(,XR1),B'1' HOME LATCH ON
95 BT FIBIOF SKIP THIS EMITTER
96 NEXEM MVI SAMCNT,X'CO' ZERO EMITTER SAMPLE CNT.
97 ITNAM MVI NTHCM+1,4C SET MIN AT 365 USEC
98 LKAN A ONE,XR1
99 CLI Z(,XR1),X'30' 1100 SAMPLES CHECKED
100 JE TSAL
101 ALC SAMCNT(1),ONE
102 TBN O(,XR1),B'100000' CHAIN EMITTER STILL UP
103 JF FIRISE
104 B LKAN
105 FIRISE A ONE,XR1
106 CLI Z(,XR1),X'30' 1100 SAMPLES CHECKED?
107 JE TSAL
108 ALC SAMCNT(1),ONE
109 TBF O(,XR1),B'100000' IF CHAIN EMIT.DOWN,FIND NEXT RISE
110 JF ITSU
111 CEMAX CLI SAMCNT,45 MORE THAN 410 USEC BETWEEN EMITS.
112 JH TOMAY
113 E FIFISE
114 ITSUP TBN I(,XR1),B'1' IS THIS A HOME PULSE
115 JF NTHCM
116 ST SAVF1,XR1
117 *****
118 * CHECK PULSE WIDTHS & HOME PULSE TIME *
119 * *****
120 GCBK A SISFR,XR1 SUBTR.120 OR 72 FROM HOME ADDR.
121 GURK A ONE,XR1
122 TBF O(,XR1),B'100000' FIND GAP
123 BF GCRK
124 B LULSE GC CHECK 142ND EMITTER WIDTH
125 B LULSE GC CHECK 143RD EMITTER WIDTH
126 B LULSE GC CHECK 144TH EMITTER WIDTH
127 MVC LEEADR(2),LEEADR SAVE 144TH ADDR.
128 B LULSE GC CHECK 145TH EMITTER WIDTH
129 SLC LEEADR(2),LEEADR DIFF. BETWEEN 144TH AND 145TH
130 HMAIN CLI LEEADR,16 SAMPLE DIFF.LESS THAN 16 OR 8
131 JL HOMER
132 HMPAX CLI LEEADR,27 SAMPLE DIFF.MORE THAN 27 OR 15
133 JMH SEEWUN
134 HOMER B HALT HOME TIME ERROR HALT
135 DC XL2'E0B2'
136 J GNIP
137 SEEWUN B LULSE

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DATE 25AUG69 31OCT69 11MAY70 01NOV70 19FEB71  
 EC NO. 816485 816529 816671 816764 818912

PROG ID OE06-3  
 PAGE 1A

EQ63 52C3 CHAIN EMITTER TIMING TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
OB88	CO 87	OB8E	138	B LULSE
OB8C	3C 27	OB99	139	MANTI MVI NTHOM+1,39
OB90	35 01	OCA6	140	L SAVR1,XR1
OB94	CO 87	OAFD	141	B LKGAN
OB98	3D 00	OCA3	142	NTHOM CLI SAMCNT,*--
OB9C	CO 02	OAF5	143	BNL NEXEM
OBAA	CO 87	O222	144	TOMNY B HALT
CBA4	E080		145	DC XL2'E080'
OB46	OF 00	OC9B	146	TSAL SLCTCOUNT(1),ONE
OBAC	CO 01	OAGD	147	BNZ SKGOON
OB80	OF 00	OC9A	148	GNIP SLCLPOINT(1),ONE
OB86	CO 01	OA52	149	BNZ SNOTRE
OB8A	CO 87	O216	150	B LINK
*****				
151	* CHECK PULSE WIDTH SUBROUTINE			
152	* *****			
153	* *****			
154	LULSE	ST	PLEXIT+3,ARR	SET RETURN ADDR.
155	LEEG	A	ONE,XR1	
156	TBN	O(,XR1),B'100000'		FIND LEAD EDGE CF EMITTER
157	BF	LEEG		
158	ST	LEEADR,XR1		SAVE LEADING EDGE ADDR.
159	MVI	SAMSAV,X'00'		ZERO SAM.COUNT
160	TREG	ALCSAMSAV(1),ONE		ADD 1 TO SAM.COUNT
161	A	ONE,XR1		ADD 1 TO SAM.ADDR.
162	TBN	O(,XR1),B'100000'		FIND TRAIL EDGE CF EMITTER
163	BT	TREG		
164	PUMIN	CLISAMSAV,2		PULSE WIDTH 2 OR MORE
165	JL	WIDER		
166	MVI	SAMSAV,X'00'		
167	SNAP	ALCSAMSAV(1),ONE		
168	A	ONE,XR1		
169	GAPWID	CLISAMSAV,1		GAP WIDTH OVER 1 ?
170	JH	PLEXIT		
171	TBN	O(,XR1),B'100000'		
172	BF	SNAP		
173	WIDER	B	HALT	WRONG PULSE WIDTH ERROR HALT
174	DC	XL2'E081'		
175	B	GNIP		
176	PLEXIT	B	**--	RETURN
177	*****			
178	* CHECK FOR BUSY & DELAY SUBROUTINE			
179	* *****			
180	* *****			
181	BROUT	ST	BSEXIT+3,ARR	LOAD RETURN ADDR.
182	SDC	MVC	BUSUB(3),BUSCTI	STOREDELAY
183	FLOOP	SLC	BUSUB(3),ONE	
184	JZ	TOLONG		
185	TIO	FLOOP,BUSY		STILL BUSY
186	J	BSEXIT		
187	TOLONG	B	HALT	ERROR HALT
188	DC	YL2'E011'		
189	B	SDC		
190	BSEXIT	B	**--	
191	*****			
192	* CONSTANTS			
193	* *****			
194	ONE	DC	IL2'1'	
195	TREE	DC	IL2'3'	
196	FOUR	DC	IL2'4'	
197	NINE	DC	IL2'9'	
198	FRTY	DC	IL2'-72'	NEG.72
199	SISFR	DC	IL2'-120'	NEG 120
200	DC	XL2'30E2'		
201	STUU	DC	XL2'OEC1'	SENSE INSTR.
202	LASADR	DC	AL2(HCMIN+2)	
203	SAMADR	DC	AL2(SENIN+1)	
204	DC	XL2'CO87'		UNCOND. BR
205	BRUNC	DC	AL2(RETURN)	

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EQ63 52C3 CHAIN EMITTER TIMING TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
OC57	OCFF	OC58	206	O0FF DC XL2'O0FF'
OC59	OC48	OC5A	207	ADFRTY DC AL2(FRTY)
OC5B	040000	OC5D	208	BUSCTI DC XL3'40000'
*****				
209	*****			
210	*	PRINTOUTS		
211	*****			
212	TITL1	DC	CL25'CHAIN EMITTER TIMING TEST'	
213	*****			
214	MAKADY	DC	CL15'THEN RESET HALT'	
215	*****			
216	*	RESERVED STORAGE		
217	*****			
218	STAT2	DS	CL2	
219	ERT1	DS	CL2	
220	LPCUNT	DS	CL1	
221	TOUNT	DS	CL1	
222	LEEADR	DS	CL2	
223	LEEAST	DS	CL2	
224	MSECS	DS	CL1	
225	HOMCNT	DS	CL2	
226	SAMCNT	DS	CL1	
227	SAMSAV	DS	CL1	
228	SAVR1	DS	CL2	
229	ORG	X'OEC0'		
230	SENIN	EQU	*	
231	HOMIN	DS	11CL100	SAMPLE AREA
232	NTHOM	DS	23CL100	SAMPLE AREA
233	DIMES	DS	5CL100	SAMPLE AREA
234	SEMID	DS	5CL100	SAMPLE AREA
235	ZROFF	DS	CL2	
236	SAMRET	DS	CL2	
237	BUSUB	DS	CL3	
238	*****			
239	* EQUATES			
240	*****			
241	ARR	EQU	X'08'	ADDRESS RECALL REGISTER
242	XR1	EQU	1	INDEX REGISTER 1
243	XR2	EQU	2	INDEX REGISTER 2
244	LPI	EQU	X'800'	LINE PRINTER IMAGE AREA
245	LINK	EQU	X'216'	ENTRY TO DCP CHAIN ROUTINE
246	PRINT	EQU	X'21A'	ENTRY TO DCP PRINT ROUTINE
247	HALT	EQU	X'22?'	ENTRY TO DCP ERROR HALT ROUTINE
248	NRDY	EQU	X'E0'	
249	BUSY	EQU	X'E6'	PRINTER BUSY CODE
250	* SENSE SWITCH EQUATES			
251	SBYTE0	EQU	X'208'	DCP SENSE SWITCH AREA
252	* CONTROL PGM SENSE SWITCHES			
253	SSW05	EQU	X'04'	PRINT MESSAGES ON MFCU
254	END			

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E063 52C3 CHAIN EMITTER TIMING TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
ADFRTY	A	002	0C5A	0207	0052
ADTUU	A	004	0A81	0063	0067
ARR	C	001	0008	0241	0154 0181
BAPRT	A	004	0A29	0036	0034
BROUT	A	004	0C17	0181	0069
BRUNC	A	002	0C56	0205	0068
BSEXIT	A	004	0C38	0190	0181* 0186
BUSCTI	A	003	0C5D	0208	0182
BUSUB	A	003	1FF6	0237	0182* 0183*
BUSY	C	001	0CE6	0249	0185
CEMAX	A	004	0B2D	0111	0047*
DIMES	A	100	1DFB	0233	
ENIF	A	004	0AE3	0091	0088 0093
ERT1	A	0C2	0C99	0219	0016
E06	A	001	0A00	0003	
FIBIOF	A	003	0AD5	0C87	0090 0095
FIRISE	A	004	0B17	0105	0103 0113
FLOCP	A	006	0C21	0183	0185
FOUR	A	0C2	0C44	0196	0065
FRTY	A	002	0C48	0198	0207
GAPWID	A	004	0BFB	0169	
GNIP	A	006	0B80	0148	0136 0175
GOBAK	A	004	0B42	0120	0052*
GORK	A	004	0B46	0121	0123
HALT	C	001	0222	0247	0134 0144 0173 0187
HMMAX	A	004	0B74	0132	0051*
HMMIN	A	004	0B6D	0130	0050*
HOMCNT	A	0C2	0CA2	0225	0076* 0079*
HOMER	A	004	0B7B	0134	0131
HOMIN	A	100	130B	0231	0082* 0202
ITNAM	A	004	0AF9	0097	0048*
ITSUP	A	003	0B38	0114	0110
LASADR	A	002	0C50	0202	0066
LEEADR	A	002	0C9D	0222	0127 0129* 0130 0132 0158*
LEEAST	A	002	0C9F	0223	0127* 0129
LEEG	A	004	0BC2	0155	0157
LINK	C	001	0216	0245	0150
LKGAN	A	004	0AFD	0098	0104 0141
LPI	C	001	0B00	0244	0077 0077 0078 0078
LPCUNT	A	001	0C9A	0220	0044* 0148*
LULSE	A	004	0B8E	0154	0124 0125 0126 0128 0137 0138
MAKADY	A	015	0C95	0214	0041
MANTI	A	004	0B8C	0139	0049*
MRALT	A	003	0A3A	0043	0037
MSECS	A	001	0CA0	0224	0056* 0059* 0076
NEXEM	A	004	0AF5	0C96	0143
NIMOH	A	100	1C07	0232	
NINE	A	002	0C46	0197	0059
NOOGOT	A	004	0A3D	0044	0035
NRDY	C	001	00E0	0248	0034
NRTIO	A	004	0A22	0034	0028
NTHCM	A	004	0B98	0142	0097* 0115 0139*
OHE	A	002	0C40	0194	0064 0079 0089 0091 0098 0101 0105 0108 0121 0146 0148 0155
OHE	A	002	0C40	0194	0160 0161 0167 0168 0183
OHE	A	002	0C58	0206	
PLEXIT	A	004	0C13	0176	0154* 0170
PRINT	C	001	021A	0246	0029 0038
PUMIN	A	004	0BE6	0164	
RETURN	A	004	0ACD	0082	0205
RTN1	A	001	0A0D	0023	0015
SAHADR	A	002	0C52	0203	0060
SAMCNT	A	001	0CA3	0226	0C96* 0101* 0108* 0111 0142
SAMRET	A	002	1FF3	0236	0068*
SAMSAV	A	001	0CA4	0227	0159* 0160* 0164 0166* 0167* 0169
SAVR1	A	002	0CA6	0228	0116* 0140
SBYTEO	C	001	0208	0251	0027 0036

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E063 52C3 CHAIN EMITTER TIMING TEST

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SDC	A	006	0C1B	0182	0189
SEEWUN	A	004	0B84	0137	0133
SEMID	A	100	1FEF	0234	
SENIN	A	0C1	0EC0	0230	0062 0081 0086 0203
SISFR	A	002	0C4A	0199	0120
SKGOON	A	006	0A6D	0059	0147
SNAP	A	006	0BF1	0167	0172
SNIK	A	004	JAA1	0073	0075
SNOTRE	A	004	0A62	0056	0046 0149
SPUDT	A	003	0A0C	0017	0045
SSW05	C	001	0004	0253	0077 0036
STAT2	A	002	0C97	0218	0073* 0074
STUU	A	002	0C4E	0201	0060* 0061
TITL1	A	025	0C76	0212	0032
TOGOON	A	006	0A73	0060	0056
TOLONG	A	004	0C31	0187	0184
TOMNY	A	004	0BA0	0144	0112
TOUNT	A	001	0C9B	0221	0057* 0146*
TREE	A	002	0C42	0195	
TREG	A	006	0B05	0160	0163
TSAL	A	006	0BA6	0146	01C0 0107
TWA	A	006	0AB3	0077	0080
WIDER	A	004	0C09	0173	0165
XR1	C	001	0001	0242	0061* 0063 0064 0066 0086* 0087 0089* 0091* 0092 0094 0098* 0099 0102 0105* 0106 0109 0114 C116 0120* 0121* 0122 0140* 0155* 0156 0158 0161* 0162 0168* 0171
XR2	C	001	0002	0243	0062* 0063 0065*
ZROFF	A	002	1FF1	0235	

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY =

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E063 52C3 CHAIN EMITTER TIMING TEST

OBJECT CARD LISTING

THE CHARACTER . INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+-Y:8F< & B-4 <W:A& D \*\*28A H H2/ HOH\*BFUHRCS - <G-BSX2/1&8A H H2Z HOH\*BFUD-CIP -8- 424E0630001

T+-Z5- <2B-2E+B HC|H&FTO\*B282F&, :|AU.TLOHB682CO\_ 5C D.J&1E| &<YCO HCI?2/0Q+ 2-CDQ < &0 :D<E0630002

T+-DOL-1K0-D<L3H BC&+ 0 L-D CD 6 -1DL&C CEC &D AC <-20100H\*<E3C SCI\*8 &200I HY&0 CHH OIYE0630003

T+-,CH (MO B (+0- B | 2SCDC / D3OH\*+0C00D03 B &# ;B az H(-D <&<BGB\_M6 &1 ;B OI O <E0630004

T+-ZWB>|8 &C D, N| <Y30Y39U6 &1 L B2YF-C- <Y01 ;B az DOH\*H\*MLQ ACDA'< .2-QM+ 2 TCD azZDE0630005

T+-\_ /;K az .|K4 <Y\*HD\$<BGB118 &G 2UEY4 &2W(-D<KTQ ACDA9H C U\_FOH\* .?BGB## /O>=C D <X00 '8QE0630006

T+->\*XBGB#B| &2 |CI2'D 2)2YHG|J% <X-HDB\*BG S.--?H G.<BGB## /O>=|B\* .WLMACH\$ /O,'|& <Y2 -\$HE0630007

T+-?P -,5OH\*BH>B CO <W01 0 DH&2 CIY<&< ABW. /OH OI -<ETQACDA8H C U ?B| D<XLO CH& + O &3&E0630008

T+-OKZ 1 (-D<&G- - < &B'M' -2U2YH \*| <Z B CH&&CQ ACD ' &2U2Y&J;B OI .2\*BG S.--\*B GB# &BQE0630009

T+-1(OH\* C&HCCB < /'6CE4| /'6CDC 2-&-A9-0/2Y\*HOH\* BH> JOH\*<F2BG \*\*\* & C & B-8\*8- 08-8 :BME0630010

T+-2HOJ<|C&G /O, ( |2K & <|HO\*X N&<PM2:|T1V 82X M2|PG&+|E8>|MO). E&|P22|('6\*PA1+/ ,82- #3HE0630011

TC 2N1)N 6\*PS1:| 2<GL80 ..... 5-EE0630012

E\*\*\*E7\*=-DC\*PH\$ =\*7M&F| | C F% ASC R A SO Q ..... 20280202710 219712\$UE0630013

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PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
      2 *                                ORG'S AT 1P00   LAST CHG:04:21 75
      3      DECK 4
      4      SEQ 0
0A00 5 PF48  START X'A00'
      6      TREP
      7 *****
      8 *
      9 *      MASTER TIMING ANALYSIS PROGRAM
     10 *
     11 *****
     12 *      SECTION PREFACE
     13 *****
0A00 FF48 0A01 14      DC      XL2'PF48'      PROGRAM ID AND REVISION LEVEL
0A02 00 0A02 15      DC      XL1'00'      SECTION FLAGS
0A03 00 0A03 16      DC      XL1'00'      CURRENT ROUTINE NUMBER
0A04 0000 0A05 17      DC      XL2'0'
0A06 0A0D 0A07 18      DC      AL2(RT01)      ADDRESS OF FIRST ROUTINE
0A08 0000 0A09 19      DC      XL2'0'
0A0A F01000 0A0C 20      DC      XL3'F01000'      UNIT DEFINITION TABLE
     21 *****
     22 *      ROUTINE 1 PREFIX
     23 *****
0A0D 01 0A0D 24 RT01 DC      XL1'01'      ROUTINE NUMBER
0A0E 00 0A0E 25      DC      XL1'00'
0A0F FFFF 0A10 26      DC      XL2'FFFF'
0A11 C0 87 0222 0A16 27 RDCNTR B      HALT
0A15 FFFF 0A16 28      DC      XL2'FFFF'
0A17 3B FF 1543 29 COM  SBP  FLA GS2,X'FF'      TURN OFF FLAGS 10 THRU 17
0A1B 0C 01 1679 15E3 30      MVC  LINE1+2,BLANK(2)
0A21 0C 01 16D1 15E3 31      MVC  LINE2+2,BLANK(2)
0A27 3C 00 1CF2 32      MVI  ORTAB+506,X'00'
0A2B 3C FF 1EEF 33      MVI  ANDTAB+506,X'FF'
0A2F 30 00 1615 34      SMS  WORK,X'00'      READ THE DATA SWITCHES
0A33 3D AA 1614 35      CLI  WORK-1,X'AA'      *CK FOR AND BRANCH IF LOOP ON
0A37 F2 81 86 36      JE   CKPE      *RUNNING THE SAME TEST IS WANTED
0A3A 38 80 0233 37      TBN  UTAB+1,X'80'      *CK FOR AND BRANCH IF NOT LOADING
0A3E F2 10 08 38      JT   SMS      *FROM A DIRECT ACCESS DEVICE
0A41 3D A0 0232 39      CLI  UTAB,X'A0'
0A45 C0 01 0A57 40      BNE  NEXTN
0A49 30 00 0A53 41 SMS  SMS  DA,0
0A4D C0 87 022A 42      B   LOAD      *LOAD
0A51 20 0A51 43      DC  XL1'20'      *FIRST
0A52 0000 0A53 44 DA   DC  XL2'0'      *RECORD
0A54 F2 87 05 45      J   STOP
0A57 C0 87 022A 46 NEXTN B      LOAD      *LOAD REST OF RECORDS
0A5B 10 0A5B 47      DC  XL1'10'      *ONE AT A TIME
0A5C 0C 5F 1F5F 08DF 48 STOP  HVC  RDPD+95,2271(96)
0A62 C0 87 021A 49      B   PRINT
0A66 01 0A66 50      DC  XL1'01'
0A67 60 0A67 51      DC  IL1'96'
0A68 1F5F 0A69 52      DC  AL2(RDPD+95)
0A6A 3D F1 1F01 53      CLI  RDPD+1,X'F1'      *CK FOR AND BRANCH IF THIS IS NOT
0A6E F2 01 1F 54      JNE  CARD      FIRST CONTROL CARD
     55 *****
     56 *      CONTROL CARD 1 MODIFICATION OF PROGRAM
     57 *****
0A71 38 20 020D 58      TBN  SBYTE5,SMSW2A      *CK FOR AND BRANCH IF NOT WANTING
0A75 F2 90 06 59      JF   FIRST1      *TO MAKE CHANGES TO THIS INFO
0A78 C0 87 0222 60      B   HALT      *HALT FOR CHANGES
0A7C FFF1 0A7D 61      DC  XL2'FFF1'      *TO BE MADE
0A7E C0 87 0226 62 FIRST1 B      PACK      *PACK COMMANDS
0A82 20 0A82 63      DC  IL1'32'      *AND DELAYS
0A83 1F23 0A84 64      DC  AL2(RDPD+35)      *INTO CHND
0A85 1F6F 0A86 65      DC  AL2(CHNDS+15)      *TABLE
0A87 0C 0D 1556 1F31 66      HVC  CHND,RDPD+49(14)      MOVE CHND NAME INTO HSG
0A8D F2 87 24 67      J   NEVER      GO READ ANOTHER CARD
0A90 3D F2 1F01 68 CARD  CLI  RDPD+1,X'F2'      *CK FOR AND BRANCH IF THIS IS
0A94 F2 81 8F 69      JE   CARD2      *THE SECOND CONTROL CARD

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
0A97 3D F3 1F01 70      CLI  RDPD+1,X'F3'      *CK FOR AND BRANCH IF THIS IS NOT
0A9B F2 01 09 71      JNE  CARD      *THE THIRD CONTROL CARD

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PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LJC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP).

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PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LJC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for timing analysis, including instructions like JNE, MVI, J, and comments such as '\*BYTE IS TO BE -ORED- INTO SETUP TO -OR- INTO HIGH ADDRESS BYTE'.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LOC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for timing analysis, including instructions like BT, SBN, MVI, J, and comments such as '\*BYTES HAVE BEEN CHECKED' and '\*BEGIN EXECUTION OF COMMANDS'.

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FF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
OF00 1C 01 15EA 01 345 HVC TIME,1(2,XR1)
OF05 0C 00 1FC6 1FC8 346 HVC DISK-1,BACK(1)
OF0B F3 00 00 347 XCUTE2 SIO 0,0 EXECUTE CHND TO BE SAMPLED
OF0E 38 10 1542 348 TBM FLAGS,FLAG3
OF12 F2 10 08 349 ONLY1 JT START
OF15 3A 10 1542 350 SBN FLAGS,FLAG3
OF19 C0 87 0E68 351 B NEXTCD
352 *
OF1D 0C 02 15EF 1609 353 START HVC CHECK1,NUMBER(3) LOAD SAMPLE COUNT
OF23 C2 01 16FC 354 LA DATFLD,XR1 LOAD DATA FIELD ADDRESS
OF27 C2 02 1AF8 355 LA ORTAB,XR2
OF2B 7C 00 0A 356 NVI 10(,XR1),X'00'
OF2E 7C 00 0E 357 NVI 14(,XR1),X'00'
OF31 06 30 1547 15D2 358 AZ MANY(4),D001(1) ADD ONE TO CHNDS CHECKED COUNT
OF37 C0 87 0F3B 359 MAY B **4 BRANCH TO FIRST SENSE REQUIRED
360 *****
361 * SYNC ON TIO CONDITION GOING OFF
362 *****
OF3B C1 00 0F3B 363 TIOCND TIO *,*-*
OF3F F2 87 64 364 J WHERE

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
366 *****
367 * START HERE IF 3 SYNCs
368 *****
OF42 70 00 01 369 SENSE3 SMS 1(,XR1),*-* STORE DESIRED DATA
OF45 78 00 00 370 SYNC3 TBM ***(,XR1),*-* *CK FOR AND BRANCH IF SYNC BIT IS
OF48 C0 90 0F42 371 BACK3 BP SENSE3 *NOT IN THE CONDITION SPECIFIED
OF4C 0C 03 1615 1621 372 HVC WORK,DELAY3(4) LOAD A DELAY COUNT
OF52 07 30 1615 15D2 373 SUB3 SZ WORK(4),D001(1) DECREMENT THE DELAY COUNT
OF58 0C 05 1611 1611 374 HVC WORK-4,WORK-4(6) DELAY 18 MACHINE CYCLES
OF5E C0 84 0F52 375 BP SUB3 LOOP IF COUNT IS NOT 0 BUT IS PLUS
376 *****
377 * START HERE IF 2 SYNCs
378 *****
OF62 70 00 01 379 SENSE2 SMS 1(,XR1),*-* STORE DESIRED DATA
OF65 78 00 00 380 SYNC2 TBM ***(,XR1),*-* *CK FOR AND BRANCH IF SYNC BIT IS
OF69 C0 90 0F62 381 BACK2 BP SENSE2 *NOT IN THE CONDITION SPECIFIED
OF6C 0C 03 1615 161D 382 HVC WORK,DELAY2(4) LOAD A DELAY COUNT
OF72 07 30 1615 15D2 383 SUB2 SZ WORK(4),D001(1) DECREMENT THE DELAY COUNT
OF78 0C 05 1611 1611 384 HVC WORK-4,WORK-4(6) DELAY 18 MACHINE CYCLES
OF7E C0 84 0F72 385 BP SUB2 LOOP IF COUNT IS NOT 0 BUT IS PLUS
386 *****
387 * START HERE IF 1 SYNC
388 *****
OF82 70 00 01 389 SENSE1 SMS 1(,XR1),*-* STORE DESIRED DATA
OF85 78 00 00 390 SYNC1 TBM ***(,XR1),*-* *CK FOR AND BRANCH IF SYNC BIT IS
OF88 C0 90 0F82 391 BACK1 BP SENSE1 *NOT IN THE CONDITION SPECIFIED
OF8C 0C 07 0F90 392 NOWAIT B **4 BR TO START SAMPLES IF NO DELAY
OF90 0C 03 1615 1619 393 HVC WORK,DELAY1(4) LOAD A DELAY COUNT
OF96 07 30 1615 15D2 394 SUB1 SZ WORK(4),D001(1) DECREMENT THE DELAY COUNT
OF9C 0C 05 1611 1611 395 HVC WORK-4,WORK-4(6) DELAY 18 MACHINE CYCLES
OFA2 C0 84 0F96 396 BP SUB1 LOOP IF COUNT IS NOT 0 BUT IS PLUS
OFA6 C0 87 OFAA 397 WHERE B **4
398 *****
399 * START SAMPLING
400 *****
401 * SENSE EVERY 50 MICRO-SEC ONLY
402 *****
OFAA 70 00 05 403 SNS3 SMS 5(,XR1),*-*
OFAD 70 00 07 404 SNS4 SMS 7(,XR1),*-*
OFB0 D2 01 04 405 LA 4(,XR1),XR1
OFB3 07 04 15EF 15D2 406 SZ CHECK1(5),D001(5) *DECREMENT SAMPLE COUNT AND LOOP
OFB9 C0 01 OFAA 407 TAB3 BNZ SNS3 *BACK IF IT IS NOT TO ZERO
OFBD C2 01 16FC 408 NOWDO LA DATFLD+0,XR1 LOAD DATA FIELD ADDRESS
OFC1 C2 02 1AF8 409 LA ORTAB+0,XR2 LOAD THE ADDRESS OF THE -OR- TABLE
OFC5 0C 02 15EF 1609 410 HVC CHECK1,NUMBER(3)
OFCB C0 87 14F6 411 SAVEIT B SETUP1 GO SAVE DATA
OFCF D2 01 04 412 LA 4(,XR1),XR1
OFD2 07 21 15EF 15D2 413 SZ CHECK1(4),D001(2)
OFD8 C0 01 OFCB 414 BNZ SAVEIT
OFDC C0 87 1107 415 OUT2 B ERROR
416 *****
417 * SENSE EVERY 100-450 MICRO-SEC
418 *****
OFE0 70 00 05 419 SNS5 SMS 5(,XR1),*-*
OFE3 70 00 07 420 SNS6 SMS 7(,XR1),*-*
OFE6 07 30 159D 15D2 421 SZ SETPRT(4),D001(1) 11 DECREMENT SAMPLE TIME COUNT BY
OPEC F2 87 05 422 J WAIT50 3
OPEF 1C 06 1614 00 423 WAIT15 HVC WORK-1,0(7,XR1) 19 DELAY 19 MACHINE CYCLES
OFF4 07 20 159D 15D2 424 WAIT50 SZ SETPRT(3),D001(1) 10 DECREMENT SAMPLE TIME COUNT BY
OFFA C0 84 OFEF 425 BB WAIT15 4
OFFE D2 01 04 426 LA 4(,XR1),XR1 3
1001 0C 01 159D 1F75 427 HVC SETPRT,MULT(2) 10 LOAD SAMPLE TIME COUNT
1007 07 30 15EF 15D2 428 SZ CHECK1(4),D001(1) 11 *DECREMENT SAMPLE COUNT AND
100D C0 01 OFE0 429 TAB5 BNZ SNS5 4 *TO SAMPLE IF COUNT IS NOT 0
1011 C0 87 OFBD 430 B NOWDO

```

FP48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

FP48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for FP48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP).

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for FP48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP) with comments on the right side.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LJC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for timing analysis, including instructions like SLC, TBN, JF, and comments such as '\*NEXT BIT NAME TO THE LEFT' and '\*CK FOR AND BRANCH IF'.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LJC OBJECT CODE, ADDR STMT SOURCE STATEMENT. Contains assembly code for timing analysis, including instructions like ALC, TBN, JF, and comments such as '\*SHIFT ALL MASKS 1 POSITION LEFT' and '\*INITIALIZE DATA'.



PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Rows include assembly code for timing analysis, such as ANDCK, TIMEUP, MOVEIT, and various control instructions.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Rows include assembly code for timing analysis, such as HVC, AND, SBP, SBN, and various control instructions.

FF48 S/3 MASTER TIMING ANALYSIS PROGRAM (HTAP)

ERR LJC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
15D7 000B	15D8	829	ELEVEN DC XL2*000B*
15D9 19B3	15DA	830	D6579 DC IL2*6579*
15DB FFFF	15DC	831	SAVEF DC XL2*FFFF*
15DD 40404040404040	15E3	832	BLANK DC CL7*
15E4 40404040404040	15EA	833	TINE DC CL7*
15EB 4040404040	15EF	834	CHECK1 DC CL5*
15F0 FFFF	15F1	835	FFFF DC XL2*FFFF*
15F2 0000	15F3	836	ZERO DC XL2*0*
15F4 01	15F4	837	ONE DC XL1*01*
15F5 C0 87 0E8D	15F5	838	NOT1 B KBTST
15F9 FE04	15FA	839	D508 DC XL2*FE04*
15FB F0F0F2	15FD	840	D002 DC DL3*002*
15FE 2380	15FF	841	TWO380 DC XL2*2380*
1600 000000	1602	842	DELAY DC XL3*000*
1603 30	1603	843	FL DC XL1*30*
844	*****		
845	* RESERVED STORAGE AREA		
846	*****		
1604	1606	847	SAMPLE DS CL3 NUMBER OF SAMPLES TO BE TAKEN
1607	1609	848	NUMBER DS CL3
160A	1615	849	WORK DS CL12
1616	1619	850	DELAY1 DS CL4
161A	161D	851	DELAY2 DS CL4
161E	1621	852	DELAY3 DS CL4
1622	1677	853	LINE1 DS CL86
1678	1679	854	DS CL2
167A	16CF	855	LINE2 DS CL86
16D0	16D1	856	DS CL2
16D2	16D2	857	LIMITS EQU *
16FC	16FB	858	DS CL42
	16FC	859	DATFLD EQU *
	1AF7	860	DS 4CL255
	1AF8	861	ORTAB EQU *
1AF8	1CF1	862	DS 2CL253
1CF2	1CF2	863	DS CL1
1CF3	1CF4	864	SS DS CL2 SYNC-SAMP COUNT AREA
	1CF5	865	ANDTAB EQU *
1CF5	1EEE	866	DS 2CL253
1EEF	1EEF	867	DS CL1
	868		
	868		
1F00	869		ORG X*1F00*
1F00	1F00	870	RDFD EQU *
	1F5F	871	DS CL96
	1F60	872	CHNDS EQU *
1F60	1F6F	873	DS CL16 *COMMAND AND/OR *DELAY TABLE
1F70	1F70	874	MASK1 DS CL1
1F71	1F71	875	MASK2 DS CL1
1F72	1F75	876	MULT DS CL4
1F76	1F79	877	PASSES DS CL4 SPECIFIED NUMBER OF SAMPLINGS
1F7A	1F7D	878	TINES DS CL4
1F7E 01FD	1F7F	879	D509 DC IL2*509*
880	*****		
881	* THIS AREA CONTAINS DATA WHICH WILL ONLY BE USED WITH PRINTER TAP		
882	*****		
1F80 OC 01 0E75 1FA1	883	LDPRNT HVC LET3+3,FORM(2) MUST BE AT ADDR -1F80-	
1F86 OC 01 0E84 1FA5	884	HVC LET4+3,IMAGE(2)	
1F8C OC 01 0E88 1FA3	885	HVC LET5+3,PTAREA(2)	
1F92 OC 03 0E8C 1FAD	886	HVC TIOTWO*3,PRTBSY*3(4)	
1F98 3C 0D 0E2F	887	HVI HAYBE,X*0D*	
1F9C C0 87 0B48	888	B LDTHEN	
1FA0 15BD	1FA1	889 FORM DC AL2(WASDN-3)	
1FA2 1FA7	1FA3	890 PTAREA DC AL2(ATE7C)	
1FA4 1FA9	1FA5	891 IMAGE DC AL2(ATE00)	
1FA6 087C	1FA7	892 ATE7C DC XL2*87C*	
1FA8 0800	1FA9	893 ATE00 DC XL2*800*	
1FAA C1 E6 0E89	894	PRTBSY TIO TIOTWO,X*E6*	

FF48 S/3 MASTER TIMING ANALYSIS PROGRAM (HTAP)

ERR LOC OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
	895	*****	
	896	* ADDRESS CONSTANTS	
	897	*****	
1FAE 1F00	1FAP	898	LDRD DC AL2(BDPD)
1FB0 1621	1FB1	899	ALINE1 DC AL2(LINE1-86)
1FB2 1679	1FB3	900	ALINE2 DC AL2(LINE2-86)
1FB4 113F	1FB5	901	AHOW DC AL2(HOW)
1FB6 1F70	1FB7	902	AMASK1 DC AL2(MASK1)
1FB8 1F71	1FB9	903	AMASK2 DC AL2(MASK2)
1FBA 0F3B	1FBB	904	ATIO DC AL2(TIOCHD)
1FBC 1107	1FBD	905	AERROR DC AL2(ERROR)
1FBE 0F8C	1FBF	906	ANOWT DC AL2(NOWAIT)
1FC0 175D	1FC1	907	DATA1 DC AL2(DATA+10)
1FC2 1603	1FC3	908	AFL DC AL2(FL)
	909	*****	
	910	* THIS AREA CONTAINS DATA WHICH WILL ONLY BE USED WITH A DISK TAP	
	911	*****	
1FC4	912	BDISK EQU *	
1FC8	913	DISK DS CL4	
1FC8	914	BACK DS CL1	
1FC9	915	OPISIT DS CL1	
1FCA OC 03 1FC7 1714	916	LDDISK HVC DISK,DATFLD+24(4)	
1FD0 OC 01 0E88 1FED	917	HVC LET5+3,CDISK(2)	
1FD6 OC 00 1FC9 1726	918	HVC OPISIT,DATFLD+42(1)	
1FDC OC 00 1FC8 1713	919	HVC BACK,DATFLD+23(1)	
1FE2 08 03 0E95 1F23	920	HVN TIOONE+1,RDFD+35	FIX FOR 1014
1FE8 C0 87 0B48	921	B LDTHEN	
1FEE 1FC4	1FED	922	CDISK DC AL2(ADISK)
	1FEE	923	ADISK DC AL2(BDISK)
	924	*****	
	925	* EQUATES	
	926	*****	
	0001	927	XR1 EQU 1
	0002	928	XR2 EQU 2
	0008	929	ARR EQU X*08*
	020D	930	SBYTE5 EQU X*20D*
	021A	931	PRINT EQU X*21A*
	021E	932	UNPACK EQU X*21E*
	0222	933	HALT EQU X*222*
	0226	934	PACK EQU X*226*
	022A	935	LOAD EQU X*22A*
	0232	936	UTAB EQU X*232*
	0080	937	SNSW28 EQU X*80*
	0040	938	SNSW29 EQU X*40*
	0020	939	SNSW2A EQU X*20*
	0010	940	SNSW2B EQU X*10*
	0040	941	FLAG1 EQU X*40*
	0010	942	FLAG3 EQU X*10*
	0008	943	FLAG4 EQU X*08*
	0002	944	FLAG6 EQU X*02*
	0001	945	FLAG7 EQU X*01*
	0080	946	FLAG10 EQU X*80*
	0040	947	FLAG11 EQU X*40*
	0020	948	FLAG12 EQU X*20*
	0010	949	FLAG13 EQU X*10*
	0008	950	FLAG14 EQU X*08*
	0004	951	FLAG15 EQU X*04*
	1753	952	EXPAND EQU DATFLD+87
	1753	953	DATA EQU DATFLD+87
	1756	954	LINECT EQU DATFLD+90
	0010	955	KEYBRD EQU X*10*
	956	TREP	
	957	* SWS 28	- PRINT ONLY LAST SAMPLE INFORMATION ON STATUS ERROR OR NOT
	958	* READY.	
	959	TREP	
	960	* SWS 29	- PRINTOUT IN TABULAR FORM.
	961	TREP	
	962	* SWS 2B	- BYPASS INITIAL NON-SAMPLE EXECUTION OF SAMPLE COMMAND

FF49 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

FF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

963 * -MPCU-
964 TREP
965 * F9 HALT - SAMPLING WAS NOT PERFORMED DUE TO AN ERROR.
966 TREP
967 * FE HALT - IF SPECIFIED IN M2, TO ALLOW CE INTERVENTION BEFORE TEST
968 * IS PERFORMED.
969 TREP
970 * FF HALT - THE PROGRAM IS NOW READY TO HAVE A -TAP- LOADED.
971 TREP
972 * -FF- IN THE DATA SWITCHES PRIOR TO THE COMPLETION OF THE TABULAR
973 * PRINTOUT.
974 TREP
975 * WILL CAUSE A SCOPE TYPE PRINTOUT OF THE SAME DATA.
976 TREP
977 * -AA- IN THE LEFT ADDRESS SWITCHES, WHEN THE -F9- OR -F9- HALT IS
978 * RESET, WILL CAUSE
979 TREP
980 * A RE-EXECUTION OF THE PREVIOUSLY LOADED TAP.
981 TREP
982 * THE INDICATED UP OR DOWN CONDITION REFERS TO THE LOGIC LEVEL, NOT
983 * THE BIT CONDITION.
984 TREP
985 * -TAP- DECKS WILL BE LOADED FROM THE PRIMARY HOPPER.
FFPF 986 END
    
```

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
AA1	A	003	1029	0440	0232*
AA10	A	003	10F0	0490	0241*
AA2	A	003	1040	0446	0233*
AA3	A	003	1059	0452	0234*
AA4	A	003	1070	0458	0235*
AA5	A	003	1087	0464	0236*
AA6	A	003	109F	0470	0237*
AA7	A	003	10B6	0476	0238*
AA8	A	003	10CA	0481	0239* 0485
AA9	A	003	10DF	0486	0240*
ADATA	A	002	14E2	0756	0669
ADD	A	003	1064	0455	0450*
ADISK	A	002	1FEP	0923	0922
ASRROR	A	002	1FBD	0905	0511
AFL	A	002	1FC3	0908	0130
AHOW	A	002	1FB5	0901	0508
ALINE1	A	002	1FB1	0899	0259
ALINE2	A	002	1FB3	0900	0260
ALLIN	A	006	1120	0502	0499
ALLOUT	A	006	1145	0512	0503 0507
AMASK1	A	002	1FB7	0902	0279 0657 0689
AMASK2	A	002	1FB9	0903	0264 0538 0670
AND	A	003	1511	0773	0772*
ANDCK	A	003	1436	0704	0678 0678* 0685*
ANDTAB	A	001	1CF5	0865	0033* 0303 0303* 0304 0304* 0513 0513* 0529 0554 0557
AND22	A	003	1533	0781	0780*
AND33	A	003	1098	0468	0467*
ANJMT	A	002	1FBF	0906	0254
ARE	C	001	0008	0929	0767
ATE00	A	002	1FA9	0893	0891
ATE7C	A	002	1PA7	0892	0890
ATIO	A	002	1FBB	0904	0153
BACK	A	001	1FC8	0914	0346 0919*
BACK1	A	004	0F88	0391	0156
BACK2	A	004	0F68	0381	0144
BACK3	A	004	0F48	0371	0139
BB1	A	005	102C	0441	0242*
BB10	A	005	10F3	0491	0251*
BB2	A	005	1043	0447	0243*
BB3	A	005	105C	0453	0244*
BB4	A	005	1073	0459	0245*
BB5	A	005	108A	0465	0246*
BB6	A	005	10A2	0471	0247*
BB7	A	005	10B9	0477	0248*
BB8	A	005	10CD	0482	0249*
BB9	A	005	10E2	0487	0250*
BDISK	A	001	1FC4	0912	0923
BLANK	A	007	15E3	0832	0030 0031 0124 0134 0142 0160 0169 0190 0192 0252 0285 0514 0597
BYPASS	A	004	0E46	0298	0294
B4	A	003	141D	0696	0675* 0682*
CARD	A	004	0A90	0068	0054
CARD2	A	004	0AE6	0106	0069
CARD4	A	004	0AA7	0078	0071
CARD5	A	004	0AD1	0096	0085
CAT	A	004	1164	0519	0515
CC1	A	003	1031	0442	0441*
CC10	A	003	10F8	0492	0491*
CC2	A	003	1048	0448	0447*
CC3	A	003	1051	0454	0453*
CC4	A	003	1078	0460	0459*
CC5	A	003	108F	0466	0465*
CC6	A	003	10A7	0472	0471*
CC7	A	003	10B2	0478	0477*
CC8	A	003	10D2	0483	0482*
CC9	A	003	10E7	0488	0487*

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (BTAP)

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (BTAP)

CROSS-REFERENCE

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains entries for CDISK, CHECK1, CKAND, CKB4, CKFE, CKJRS, CKORS1, CK0, CK41, CK411, CK42, CLCCOM, CLEAR, CHND, CHNDS, COMP, COMP22, COMP3, COMP33, COND, CON, CT1, CT11, CT2, CT22, CT3, DA, DATA, DATA1, DATPLD, DD1, DELAY, DELAY1, DELAY2, DELAY3, DELAY7, DIAG, DISK, DLY1, DOWNEXT, DOWN1, DOWN2, D001, D002, D50, D508, D509, D6579, ELEVEN, ERROR, EXPAND, FFFF, PF48, FIFTY1, FIFTY2, FINSH1, FIRST, FIRST1.

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains entries for FIX, FL, FLAGS, FLAGS2, FLAG1, FLAG10, FLAG11, FLAG12, FLAG13, FLAG14, FLAG15, FLAG3, FLAG4, FLAG6, FLAG7, FORM, FIFO, GETON, GETOUT, HALT, HISTORY, HOW, IMAGE, INIT, INIT2, ISMFCU, JUMPIT, KBTST, KEYBRD, LAST, LATER, LDDISK, LDPBNT, LDRD, LDTHM, LEFT1, LEFT2, LETS, LETSGO, LET3, LET4, LET5, LIMITS, LINE, LINECT, LINE1, LINE2, LOAD, LOGIT, MANY, MASK1, MASK2, MAYBE, MODIFY, MOD1, MOVEIT, MULT, NEVER, NEXTCD, NEXTN, NEXT1, NODLAY, NOT1, NOW.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

CROSS-REFERENCE

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEPN, REFERENCES. Contains cross-reference data for symbols like NOWAIT, NOWCK, NOWDO, etc.

Table with columns: SYMBOL, T, LEN, VALUE, DEPN, REFERENCES. Contains cross-reference data for symbols like SETUP2, SET1, SHIPT, etc.

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

OBJECT CARD LISTING

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEPN	REFERENCES
XR2	C	001	0002	0928	0729* 0731 0731* 0734* 0768 0771 0776 0779 0329* 0330* 0355* 0409* 0444 0445* 0455 0456* 0461 0462* 0468 0474* 0529* 0554* 0557* 0584 0599 0601 0608 0614 0614* 0691* 0702 0704 0714 0714* 0717 0719* 0728 0732 0732* 0735* 0769 0770* 0773 0775* 0777 0778* 0781 0783* 0171 0317 0494
ZERO	A	002	15F3	0836	
TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY =					0

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
GBK GBD	PM 25	89722 EC	572266	MASTER TIMING AN	ALYSIS PROGRAM
T+-Y: *4-	B-4	& D	*** /OH	S**@*1BCC DO;JP	TC DO4JPT  **@T3
T+-Z5-	H3@/ H E	B<% ABV*0	ZLOH*	BHS ***  HGA*BG SY	6CE@-POT-0H*BF-E
T+-D00	\$ /OHS**G	/OHVHA@TG6@<CJH	OG3G2/28*@/@A@YE	-<- -HAB61HEX*	-H*HGCL74G0G2 6Q
T+-,	31*P *H~ -H	AEXBG /YO+D	H67H	6AXBG S.0*%BGC/6	**J@A0 DHH@BG SR
T+-KHA	BG S.*@-0	CG7H~E00AEG~0LX	DEH< 6A*P@YDH*U	H600AG 6~H@BG SR	QG5*PI3%HCZH*1J@
T+-/_G8	(A/@1E;	**J*H+C-O*TX	E?@	2@ Y:B :HC D+/A*	CC ** +*1+C ** +/*
T+->	P00CESD~H60	BC4*PI 0	C4<PB@0	AC3Y K~HGCO4AG3@	H8*HAF00AC3Y E00
T+-7PE	172/10*81@	2@-D C **  A*OC	D	+/-@@Y*QC D +--	.C <OFJ@*C H /1*
T+-0KE	00N20*BG1*	H4% AB*Q< A	OE7@	< ** =,E7@< ** /E7@	H ** :NE7@< 1**G2
T+-1(C	** P /\$=C **	6FJ*BC **  ,/*BC **		19A*BC ** ~*A* C **	H*/\$*C ** HB/\$*C **
T+-2H:	-0 G7DPA 0	EK P 00	EKOP 00	DF@P 00	DHQP 04
T+-3CE;	2 K-< A@	CE?@2A*\$@Y)+C **		1\$= 6DO**HAA33	HG572/3Y@1A*\$@Y*
T+-3=51	*\$@Y+~ <Q	-O*HG P 4A@O*H* H		AB@OAC:U6D HGA-0	AC:U ? OBE-Q~P00
T+-49E)	G2 6U< --	C: X2/06@- = (B <		6H/*\$0-D~ 10 DBY	G 666 * AA@ AO
T+-54	AB7 A0 D<X	G ** 68 ** + AC1 **		BDC ~00-BDD*~00-	BDF ~00-BDG*~00-
T+-67G5	H /CJG5X	H /CHG5XH /C7G5X		( J@3E; 2 6Q< 6@	:G@@:6ANB *~H?H
T+-7D6/	=3  ** @ACO	E(-@ AL-C D(2A=		9+ D **  H6I 8AE(H	H6 8AE(YH6 8 E(
T+-8V	JJ8E)-+ ** 7	FC*\$ 67E  D(1T-		DEH  D ZP+-@N600	AC*~@BGC*H@P1H
T+-9-C8	2D 4@/0@	LC <+TAP@Y*Q+A		BC~H5A30&C1 2/06	@Y0A@* ** @~ C @
T+-:5@03@G-	)@*H	AG6 < 10)G7H1*A=		? ~@+**HAA35CX<	1*J=?<~Q~,@G@DK4

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (HTAP)

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+803H07X0 H 8+10AE/NAOH\*BG-H OEJQJC-HO /P4A2 ODJPKO D+ CHBE) Y 6 /P10H6+2 @BE-H H' < OTDFP480021

T+3J 84D4-DBOH+ +SJOAC7<AG DN:-D < A\*PGAX3 CK 6. /092G D|C6D\* JP D 60 G@Q-2| < C- 6ENH 9BUPP480022

T+<@/ H+ / N6XB GCW- < /P7E-XB JS @0-H@=GO BXO C-Q OEH\*N4%BGC37A @ @Y)U\* A; OI 16-0 8C PP480023

T+8G 1QNESDGAQ NE) H<AJQJE/G / K\* A; OI 1Q-0 CE/HOGE\*OE/MN4-0 EE/DOD\*BDC7IO E 8 @Q PP480024

T+BOI 1-XBGC9 < 1QNE/UG<AQNE)E <LJQJE/G / =OOH\* |DX AP A'HAA \* DE;@N4% AC: B JS @0-H JJ PP480025

T+P7- < /P7E-X /1L64-DDA2DN#1P KO D|2@BGD6)0 H 0 \*G<AO)E).2/OH \*A/QH \*-ER4N4XB DC=@ 53UPP480026

T+84-DDC DNXJ 5A3 N#1PKO D|8<B GC850 NO \*\* A /EXY O CER4~)P CJO DCH ; - +G 6+ QA-PP480027

T+/A3> - (-H~7 CJO DDD ; - +GO N7 < AAVE)32/OA 0 \* AAS GY C, S CQBE-Y\* AA@ G CJO K/HPP480028

T+/B> AA9 GY C, Y CQBQ7@~ AP\$ G CJO DI ; - +C 6WJPS> 1|@N7G CJO DH- ; - +1|@ N63Q QK-PP480029

T+/CZ /P:OH\*6\_X CJO D.@ ; - +A2D NXJPH@Y\*J\* (G 640A: 8GD/O)E). /ACH\* (G 6: A : 8 LIMP480030

T+/DUAO<N#1PR\* (G 6=6A: \*K 6J < 68N@ @ADAN8- H (OA \*KC/ EN|2U Y GDA34E). 6@)A3 ~;JH HKXPP480031

T+/E-4?HAG<BGCW- 8- H(OI JJ60AC'@ -\_BGC44< 6~-G#4 < J,8P74< J38C|Y ( 1NGE;|2 6, /OH S\*\*U 8C8PP480032

T+/FEOH\*HE@BG /8 BE;YNU-OAE/HN\*O@ AE/HN'< ADP<<A/P DE)D@ A)OO-DE=XH BG|\* < /P7E-Q8BAN COA ; 1\*PP480033

T+/GND:D86 H(OI LY60AD;X~>BG /Z CL10K\*\*@< JHKE(H < JHKE(Y@6A)LCEQ PH/)LC \*PH1N5|P P6@H :18PP480034

T+/J6 J,:0-H\*H GB<HAF7XB /36+ D <B@DO, /OHED-0 BE;@OA-OPF;YN460 FE4HN:-OHE2H 0 HE3 9CUPP480035

T+/L. | JH<E)- | JHKE)/8 6|2DB( 6 6G2UI-8BANB@/ (+ DN6?H6< OHE3Y N26OPE4YN:7HG.P- A ~H :H4PP480036

T+/HFDD <BA\*:EE\* <A/)BE;D8 6|2DAN 8 6P2U \*2/5Y<BA\* :ES <A/)BE; /OH E L\*PH3YBENH@BJN BC Q N64PP480037

T+/.AE4YH8HG(\$- A \*H6P.-A ~H6H\*B GDT@8BANB@/ ;+~D N6?HGE@-A \*B@DZ8 <BA\*:ES <A/)BE; Y :DAN 08VPP480038

T+/.@6\_HA >HB -Q DE;YNS \*OE;@N4% AD/@8 /NB@Z G+OH N6?HGHOAD>@KI7- A |H6B60GE3UN>|H GA-0 \*THPP480039

T+<7A1\*9E\*C /OH E J4P+68 D;UJ:68 DS KH 8 DY@KT08 DVXK008 DUUKK68 DSQKI-3 JZHKV68 DD4 16HPP480040

T+/(2DD4+ AI/DWG 2-608DANCOA J8<B GD)H@ JGZ| DKECO ADY@@ JIS| DKKLO ADSQ@ JHN| DK,LO ADWD 'T\*PP480041

T+/@\_A N6\*HGCTY 6EN<< JG,G@~/1G -OH\*BF/QO AQW|~@ OE\* AB/D:BANCOH\* J-60AEDOH8-OAD@ ~>L- 5Q-PP480042

PF48 S/3 MASTER TIMING ANALYSIS PROGRAM (HTAP)

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+|Y 6 @/A)C- L,/+>C- HPA6QC- HG/6;C- HH16,C- H<J61C- H(1670 D L,LOAD:8@ J6Q| D NGT0 08DFP480043

T+6T J61| DNH30 AEC\*8-ANCA/A;+Y N600AD@ ~\_3QAE-D 6 /P10H\*L,6OHER4 NXX-A \*H6CP-A ~H 6HCO EY+PP480044

T+/J;@JOS@Y+~; D A@Z L> DC@Z (> D A@Z G|DNV~HGA-0 PERXN:-OH NXC@ AEDON6<BGD@6@-AN C4-D 6THPP480045

T+/KR =HB 08 E5Q N'CSAE/H4 /QLO-D O4XHE55' \*OC2-J' ~-C2-K(( PH?H DB44 J)O@YHC7EO 4-D NYTFF480046

T+/LH ?HGA\_HA ;H BB@BGE6U5 JQN(6H ODOQUE;YNSC--EH| 2DAB:HANCOH\*BPU ( |ER.\*\*@BG /YAOAR 70H\* @D4PP480047

T+/M| /YBOAS|OH\* BP-EQE5<GHJPF). J+/OH\*BF/S /OY J( -N6JO E6 >- (-H~1@ E)O C ND/H PH8PP480048

T+/NH7.% C3\*E)O 6 /P:G NH-P: 6 /'@GO N7 D< AN 4E)2@ @\*1P\* (-H N=XBG DA 6DA 6D 616PP480049

T+/OE6DA 6DA 6DA 6DA 6<|N5+LS6+. A5(-L1\*J QDCO@|C O@DCH2\*|R5>.E04C 50)LP4@N @@XN1H\_ 6 (< -@-PP480050

T+/P 0;.T6<|N5\*J 6DA 6DA 6DA 6DA 6DA 6+SE5; ( 1 (\$ N5;SE5; ( 6+LP6+S ABUCD5>SN9XGS&DC U54 R.4PP480051

T+/P@6+PA6\*1A0\_| E'-CO@|CO@|C1@- B-.PS|\*\*@A 6DA 6DA 6DA 6DA 6DA 6DC\*\*0 \*BGCY7 -A| @@DFP480052

TA1QC@|HT- C ..... 25 PP480053

T+/8 -4< 695G:D < 6:DG:K< 6:HG:< < 0:<G:4@C687OH\* .KAO'G:~D6/@B C 19--IG0 OHJ9DL@ ~\*A@ OE PP480054

TB/\*C@6@D6\*(TA) JE-< ..... 8-UPP480055

TIJ?C <~11\*HC D +SA\_C ~2J\*HC ~2A\*LB <+VJ@T0H\* .KA?G@6 ..... \*PP480056

\* SWS 28 - PRI HT ONLY LAST SAM PLE INFORMATION ON STATUS ERROR OR NOT READY. .... PP480057

\* SWS 29 - PRI HTOUT IN TABULAR FORM. .... PP480058

\* SWS 2B - BYP ASS INITIAL NON-SAMPLE EXECUTION OF SAMPLE COMMA ND -BPCU- ..... PP480059

\* P9 HALT ~ SAM PLING WAS NOT PE FORMED DUE TO AN ERROR. .... PP480060

\* PE HALT - IF SPECIFIED IN H2, TO ALLOW CE INT ERVENTION BEFORE TEST I S PERFOR MED. .... PP480061

\* PF HALT - THE PROGRAM IS NOW READY TO HAVE A -TAP- LOADED. .... PP480062

\* -ZF- IN THE D ATA SWITCHES PRI OR TO THE COMPLE TION OF THE TABU LAR PRINTOUT. .... PP480063

\* ..... WILL CAU SE A SCOPE TYPE PRINTOUT OF THE SAME DATA. .... PP480064

FF48 S/3 MASTER TIMING ANALYSIS PROGRAM (MTAP)

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

\* -AA- IN THE LEFT ADDRESS SWITCHES, WHEN THE -FP- OR -F9- HALT IS RESET, WILL CAUSE FF480065

\* ..... A RE-EXECUTION OF THE PREVIOUSLY LOADED TAP. .... FF480066

\* THE INDICATED UP OR DOWN CONDITION REFERS TO THE LOGIC LEVEL, NOT THE BIT CONDITION FF480067

\* -TAP- DECKS WILL BE LOADED FROM THE PRIMARY SUPPORTER. .... FF480068

\*\*\*\*\*E7\*-DC\*PES =\*7H6P| ; C \*\* FX ASC R A SO Q ..... 17300303750 507752Q4FF480069

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LAST PAGE  
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DATE	16MAR70	14APR70	29JUN70	01OCT70	30JUL73	15NOV74	02MAY75	PROG ID	FF4-8
EC NO.	816651	816678	816704	816760	577121	572239	572266	PAGE	14



8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	
		2	DECK	4		
		3	SEQ	0		
0A00		4	CS910	START	X*0000*	
		5	YREP			
0A00		6	ORG	X*A00*		
		7	*****			
		8	SECTION PREFACE			
		9	*****			
0A00 8912	0A01	10	DC	XL2*8912*	EQUIPMENT AND SECTION NUMBER.	
0A02 00	0A02	11	DC	XL1*00*	HAVE SECTION UDT ENTRIES	
0A03 00	0A03	12	PRTM	DC XL1*00*	CURRENT ROUTINE NUMBER	
0A04 0900	0A05	13	DC	XL2*0*	RESERVED BYTES.	
0A05 0A10	0A07	14	DC	AL2(RT01)	ADDRESS OF 1ST ROUTINE PREFACE.	
0A06 6601	0A09	15	DC	AL2(ERRLOG)	ADDRESS OF ERROR LOGOUT	
0A0A 890000	0A0C	16	UDT2	DC XL3*890000*	INTEGR. DISP. ADAPTER	
		17	*	OPTION	MEANING	
		18	*	0	KATAKANA FEATURE INSTALLED	
		19	*	1	3RD 2K FE1 STG CARD IS INSTALLED. (Z-W7T4)	
		20	*	2	UNUSED	
		21	*	3	PORTS 4,5,6 TERM. EXPANSION 1 (Z-W7R2)	
		22	*			
		23	*	4	PORTS 7,8,9 TERM. EXPANSION 2 (Z-W7S2)	
		24	*	5	PORTS 10,11,12 TERM. EXPANSION 3 (Z-W7T2)	
		25	*	6	PORTS 13,14,15 TERM. EXPANSION 4 (Z-W7E2)	
		26	*	7	PORTS 16,17,18 TERM. EXPANSION 5 (Z-W7F2)	
		27	*			
		28	*	8	PORTS 19,20,21 TERM. EXPANSION 6 (Z-W7G2)	
		29	*	9	PORTS 22,23,24 TERM. EXPANSION 7 (Z-W7E4)	
		30	*	A	PORTS 25,26,27 TERM. EXPANSION 8 (Z-W7F4)	
		31	*	B	PORTS 28,29,30 TERM. EXPANSION 9 (Z-W7G4)	
0A00 891000	0A0F	32	UDT3	DC XL3*801000*	BSCA-1 (OPTIONAL)	
		33	*			
		34	*****			
		35	*	ROUTINE 1 - TIO TEST		
		36	*****			
		37	*			
		38	*	ALL ATTACHMENT CONDITIONS ARE TESTED ON ENTRY		
		39	*	TO DETERMINE IF ANY CONDITION IS PENDING. AT THIS TIME.		
		40	*	NO CONDITIONS SHOULD BE PENDING.		
		41	*			
		42	*****			
		43	*			
0A10 01	0A10	44	RT01	DC XL1*01*	ROUTINE NUMBER.	
0A11 00	0A11	45	DC	XL1*00*	NO MANUAL INTERVENTION.	
0A12 0A8D	0A13	46	DC	AL2(RT02)	NEXT ROUTINE.	
		47				
0A14 39 01 4EF1		48	TBF	RETRY,X*01*	TEST FOR RE-ENTRY VIA SYS	
0A18 38 01 4EF1		49	SBF	RETRY,X*0*	RESET & RESET RE-ENTRY BIT.	
0A1C C0 90 4885		50	BF	NTPRST	RESUME MANUAL INTERV. ROUTINE	
0A20 C0 87 0A24		51	START	B LABEL		
0A24 38 01 020D		52	LABEL	TBN SBYTE5,SSW2F		
0A28 C0 87 0A2C		53	B	LABELR		
0A2C C0 87 021A		54	LABELR	B PRINT	PRINT ROUTINE HEADING	
0A30 01	0A30	55	DC	XL1*01*		
0A31 16	0A31	56	DC	IL1*22*		
0A32 0A8C	0A33	57	DC	AL2(RT1ST)		
		58				
0A34 F3 58 80		59	SIO	X*80*,SIOI	.DISABLE (RESET ATTACHMENT)	
0A37 3C 89 61AF		60	MVI	DEVID,X*89*	.RESTORE DEVICE ID	
0A3B 3C F0 6AD4		61	MVI	ELPPST,C*0*	.RESET ERROR LOG NO.	
	0A43	62	USING	TIOI,XR1		
		63				
0A3F C2 01 0A43		64	LA	TIOI,XR1		
		65				
0A43 D1 58 80		66	TIOI	TIO TIO3(XR1),NOTRDY	ATTACHMENT NOT READY ?	
		67				
0A46 C0 87 5B72		68	B	PRINTM	.ERROR HALT -01--	
0A4A 01	0A4A	69	DC	XL1*01*		

8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	
		0A48	IB	0A48	70 DC IL1*27*	
		0A4C	0A42	0A4D	71 DC AL2(STATM7)	
					72	
		0A4E	D1 5D 12	73 TIO3 TIO TIO3ER(XR1),ATTCHK	.ATTACHMENT CHECK	
		0A51	C0 87 0216	74 B LINK		
					75	
		0A55		0A55	76 TIO3ER EQU *	.ERROR HALT -03--
		0A55		0A55	77 TIO R01PRT,FETWRD	.BRANCH IF C.S. WRITE DATA CHK
		0A59	C1 5A 0A54	78 TIO R01AS,NDBCHK	.BRANCH IF NDB CHK	
		0A5D	C1 5B 0A5B	79 TIO R01PRT,CSCMK	.BRANCH IF C.S. DATA CHK	
		0A61	F2 87 87	80 J R01PRT		
		0A64	C1 5B 0A6B	81 R01AS TIO R01PRT,CSCMK	.BRANCH IF C.S. DATA CHK TDD	
		0A68	F2 87 80	82 J R01PRT		
		0A6B	C0 87 5B72	83 R01PRT B PRINTM		
		0A6F	03	0A6F	84 DC XL1*03*	
		0A70	18	0A70	85 DC IL1*16*	
		0A71	6047	0A72	86 DC AL2(STATM5)	
					87	
		0A73	C0 87 0216	88 B LINK	EXIT ROUT.	
					89	
		0A77	D9D6E4E340F0F J40	0A8C	90 RT1ST DC CL22*ROUT 01 ATTACHMENT TIO*	
		0A7F	C1E3E3C1C3C8D4C5		90	
		0A87	D5E340E3C9D5		90	
					91	
					92	
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					134	

0912 DISPLAY ADAPTER TEST

ERR LDC OBJECT CODE ADDR STMT SOURCE STATEMENT
0AF9 C0 87 8B72 138 TIOIE 0 PRINTH
0AFD 05 0AFD 136 DC XL1'05'
0AFE 11 0AFE 137 DC XL1'17'
0AFP 6087 0B00 138 DC AL2(STATM5)
0B01 C0 87 8B16 139 B LINK

0912 DISPLAY ADAPTER TEST

ERR LDC OBJECT CODE ADDR STMT SOURCE STATEMENT
0B76 0D67 0B77 202 DC AL2(STATM5)
0B78 C0 87 8B38 204 R03ST 0 LDBP
0B7C 0C 01 0D8F 0D 8D 205 MVC M0B5T(2),X10B1
0B82 3C 00 0D60 206 MVI INCFLG,X'00'
0B86 3C 00 61B7 207 MVI XFLAG,X'00'
0B8A 3C 00 61B8 208 MVI YFLAG,X'00'
0B8E 3C 00 61B9 209 MVI ZFLAG,X'00'
0B92 F3 58 C0 210 SIO X'CO',SIOI
0B95 C2 01 0C60 211 212 USING R30000,XR1
0B96 213 LA R30000,XR1
0B99 0D FF 5512 95 12 214 215 CLC REPEAT(256),REPEAT
0B9F C1 58 0B48 216 TIO R03K03,M0B4D
0BA3 C0 87 8B72 217 B PRINTM
0BA7 09 0BA7 218 DC XL1'09'
0BA8 1B 0BA8 219 DC IL1'27'
0BA9 60A2 0BAA 220 DC AL2(STATM5)
0BA9 221
0BA8 C1 5E 0BF5 222 R03K03 TIO R03K05,FETARD
0BAF C1 5C 0BF5 223 TIO R03K05,FETARD
0BB3 C0 FF 61B0 224 MVI ATFLG,X'FF'
0BB7 C1 5D 0BF6 225 TIO R03NOE,ATTCHK
0BB8 3C 00 61B0 226 MVI ATFLG,0
0BBF F3 58 84 227 R03NOE SIO X'04',SIOI
0BC2 3C 00 0DF0 228 MVI OPDECD,0
0BC6 31 59 0DF0 229 R03K04 LIO OPDECD,OPDEC
0BCA 0E 00 0DF0 SA 0B 231 ALC OPDECD(1),MUN
0BD0 3D 20 0DF0 232 CLI OPDECD,X'20'
0BD4 C0 01 0BC6 233 BNE R03K04
0BD8 F3 58 C0 234 SIO X'CO',SIOI
0BD8 0D FF 5512 55 12 235 CLC REPEAT(256),REPEAT
0BE1 C1 5D 0BE9 236 TIO R03K06,ATTCHK
0BE5 3D 0F 0DA7 237 B R03EPA
0BE9 3D FF 61B0 238 R03K06 CLI ATFLG,X'FF'
0BED C0 81 0DA7 239 DE R03EPA
0BF1 C0 87 5D38 240 B LDBP
0BF1 241
0BF5 F3 58 80 242 R03K05 SIO X'00',SIOI
0BF8 31 48 0D62 243 LIO ZERO,M0B0
0BFC 30 48 0DEC 244 SNS HOLD1,M0B0
0C00 31 48 0D59 245 LIO XFFFF,M0B0
0C04 30 48 0DEE 246 SNS HOLD2,M0B0
0C08 3C 0B 0C60 247 MVI R3HLT,X'0B'
0C0C 3C 0F 61B7 248 MVI XFLAG,X'FF'
0C10 0D 01 0DEC 0D 8E 249 CLC M0LD1(2),M0LD2
0C16 F2 81 22 250 JE R3E
0C19 3C 0C 0C60 251 MVI R3HLT,X'0C'
0C1D 3C 0F 61B7 252 MVI XFLAG,X'F0'
0C21 0D 00 0D8B 0D 8D 253 CLC M0LD1-1(1),M0LD2-1
0C27 F2 81 11 254 JE R3E
0C2A 0D 00 0DEC 0D 8E 255 CLC M0LD1(1),M0LD2
0C30 F2 01 30 256 JNE R3RST
0C33 3C 0D 0C60 257 MVI R3HLT,X'0D'
0C37 3C 0F 61B7 258 MVI XFLAG,X'0F'
0C3B 0C 00 0C52 0C 60 259 R3E MVC R3HLT(1),R3HLT
0C41 0C 01 0D53 SA 0B 260 MVC M0BA(2),MUN
0C47 0C 01 5FE6 0DEC 261 MVC STATA(2),M0LD1
0C4D C0 87 5DA5 262 R3BPO B STATUS
0C51 81 0C51 263 DC XL1'81'
0C52 00 0C52 264 R3HLT1 DC XL1'00'
0C53 0000 0C54 265 DC XL2'0000'
0C55 0C 01 5FE6 0D 8E 266 MVC STATA(2),M0LD2
0C5B C0 87 5DA5 267 B STATUS
0C5F 80 0C5F 268 DC XL1'80'
0C60 00 0C60 269 R3HLT DC XL1'00'

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like R30ST, R3019, R3022, etc.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Continuation of assembly code for display adapter test, including instructions like R3INC(.XR1), R3020, etc.



0012 DISPLAY ADAPTER TEST

Table with columns: ERR LDC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like R3CK17, R3CONE, R3C20, and R3CEND.

0012 DISPLAY ADAPTER TEST

Table with columns: ERR LDC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like R3CEND, R3CE09, R3CE0A, and R3CE0B.



0912 DISPLAY ADAPTER TEST

Table with columns: ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like R04CNT, R04END, R04K07, and comments such as 'INCREMENT EXPECTED RESULT' and 'CHECK FOR END'.

0912 DISPLAY ADAPTER TEST

Table with columns: ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like R05F1, R05F2, R05F3, and comments such as 'ERROR IF NO CHANGE IN HI BYTE' and 'SET UP MALT 16'.





## 0912 DISPLAY ADAPTER TEST

ERR LDC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

159B 0D 01 5672 568B      1038      CLC  ROSWD1,X00FF
15A1 C0 04 13A3          1039      BNH  ROSK0B
                                  1040
15A5 3B 20 020A          1041      TBN  SBYTE2,SSW12
15A9 F2 90 05           1042      JF   ROSK0A
15AC C0 87 5867          1043      B    ROSDCS
15B0 60                 15B0 1044      DC   XL1'80'
                                  1045
15B1 C2 01 5701          1046 ROSK0A LA  ROSW1B,XR1
15B5 C0 87 16CA          1047      B    ROSSPC
15B9 40                 15B9 1048      DC   XL1'40'
                                  1049
15BA 30 58 5FE6          1050 ROSK0B SNS STATAC,CTSTOR
15BE 4C 01 01 5FE6       1051      MVC  I(2,XR1),STATAC
15C3 D2 01 02           1052      LA   2(XR1),XR1
                                  1053
15C6 C1 5D 138C          1054      TIO  ROSSEX,ATTCHK
15CA 00 01 5FE6 16 0B   1055      CLC  STATAC,ROSSSC(2)
15D0 C0 81 18D8          1056      BE   ROSK0C
15D4 C0 87 13BC          1057      B    ROSSEX
                                  1058
                                  1059
15D8 0E 01 1698 56 71   1060 ROSK0C ALC ROSSSC,ROSSIN(2)
15DE E2 02 01           1061      LA   I(.XR2),XR2
15E1 34 02 5673          1062      ST   ROSW01,XR2
15E5 00 01 5673 56 1D   1063      CLC  ROSW01,X01FF
15EB C0 04 15BA          1064      BNH  ROSK0B
                                  1065
15EF 3B 20 020A          1066      TBN  SBYTE2,SSW12
15F3 F2 90 05           1067      JF   ROSK0D
15F6 C0 87 5867          1068      B    ROSDCS
15FA 40                 15FA 1069      DC   XL1'40'
                                  1070
15FB C2 01 5701          1071 ROSK0D LA  ROSW1B,XR1
15FF C0 87 16CA          1072      B    ROSSPC
1603 20                 1603 1073      DC   XL1'20'
                                  1074
1604 30 58 5FE6          1075 ROSK0E SNS STATAC,CTSTOR
1608 4C 01 01 5FE6       1076      MVC  I(2,XR1),STATAC
160D D2 01 02           1077      LA   2(XR1),XR1
                                  1078
1610 C1 5D 138C          1079      TIO  ROSSEX,ATTCHK
1614 0D 01 5FE6 16 5B   1080      CLC  STATAC,ROSSSC(2)
161A F2 81 04           1081      JE   ROSK0F
161D C0 87 13BC          1082      B    ROSSEX
                                  1083
1621 0E 01 1698 56 71   1084 ROSK0F ALC ROSSSC,ROSSIN(2)
1627 E2 02 01           1085      LA   I(.XR2),XR2
162A 34 02 5673          1086      ST   ROSW01,XR2
162E 0D 01 5673 56 0F   1087      CLC  ROSW01,X02FF
1634 C0 04 1604          1088      BNH  ROSK0E
                                  1089
1638 3B 20 020A          1090      TBN  SBYTE2,SSW12
163C F2 90 05           1091      JF   ROSK10
163F C0 87 5867          1092      B    ROSDCS
1643 20                 1643 1093      DC   XL1'20'
                                  1094
                                  1095
1644 C2 01 5701          1096 ROSK10 LA  ROSW1B,XR1
1648 C0 87 16CA          1097      B    ROSSPC
164C 10                 164C 1098      DC   XL1'10'
                                  1099
164D 30 58 5FE6          1100 ROSK11 SNS STATAC,CTSTOR
1651 4C 01 01 5FE6       1101      MVC  I(2,XR1),STATAC
1656 D2 01 02           1102      LA   2(XR1),XR1
                                  1103
1659 C1 5D 138C          1104      TIO  ROSSEX,ATTCHK
165D 0D 01 5FE6 16 5B   1105      CLC  STATAC,ROSSSC(2)

```

DATE 07JUL75 25OCT75 15JAN76  
EC NO. 823223 824032 825034

PROG ID 0891-2  
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## 0912 DISPLAY ADAPTER TEST

ERR LDC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

1663 F2 81 04           1106      JE   ROSK12
1666 C0 87 13BC          1107      B    ROSSEX
                                  1108
166A 0E 01 1698 56 71   1109 ROSK12 ALC ROSSSC,ROSSIN(2)
1670 E2 02 01           1110      LA   I(.XR2),XR2
1673 34 02 5673          1111      ST   ROSW01,XR2
1677 0D 01 5673 56 E1   1112      CLC  ROSW01,X02FF
167D C0 04 164D          1113      BNH  ROSK11
                                  1114
1681 3B 20 020A          1115      TBN  SBYTE2,SSW12
1685 F2 90 05           1116      JF   RCSJCI
1688 C0 87 5867          1117      B    ROSDCS
168C 10                 168C 1118      DC   XL1'10'
168D C0 87 169D          1119 ROSJCI B  ROSK14
                                  1120
1691 C0 87 8DA5          1121 ROSLPR B  STATUS
1695 60                 1695 1122      DC   XL1'60'
1698 17                 1698 1123      DC   XL1'17'
1699 0000               1699 1124 ROSSSC DC XL2'0'
                                  1125      B    ROSK1B
                                  1126
169D 3D 80 566F          1127 ROSK14 CLI ROSSF1,X'80'
16A1 F2 81 08           1128      JNE  ROSK15
16A4 3C 40 566F          1129      MVI  ROSSF1,X'40'
16A8 C0 87 133A          1130      B    ROSK01
                                  1131
16AC 3D 40 566F          1132 ROSK15 CLI ROSSF1,X'40'
16B0 F2 01 10           1133      JNE  ROSK18
16B3 3C 28 566F          1134      MVI  ROSSF1,X'20'
16B7 C0 87 133A          1135      B    ROSK01
                                  1136
16BB C0 87 8DA5          1137 RSINCE B  STATUS
16BF 04                 16BF 1138      DC   XL1'04'
16C0 1A                 16C0 1139      DC   XL1'1A'
16C1 0000               16C2 1140 ROSENC DC XL2'0'
                                  1141
16C3 F3 58 80           1142 ROSK18 SIO X'80',SIOI
16C6 C0 87 0216          1143      B    LINK
                                  1144
1145 *****
1146 * SUBROUTINE ROSSPC *****
1147 *****
1148 * PURPOSE OF SUBROUTINE: TO SET PROGRAM COUNTERS FOR FSG'S IN TEST *
1149 *
1150 * LINKAGE: B ROSSPC
1151 * DC XL1'XX' .FLAG BYTE
1152 *
1153 * BIT 0 - FSG 1 COUNT INITIALIZATION
1154 * BIT 1 - FSG 2 COUNT INITIALIZATION
1155 * BIT 2 - FSG 3 COUNT INITIALIZATION
1156 * BIT 3 - FSG 4 COUNT INITIALIZATION
1157 * BIT 4-7 NOT USED
1158 *
1159 * INPUT REQUIREMENT: ROSSF1 (SUBROUTINE FLAG) MUST BE PREVIOUSLY SET
1160 * TO THE TEST BEING EXECUTED:
1161 *
1162 * BIT 0 - PART 1: F501=F502=F503=F504= -0000-
1163 * BIT 1 - PART 2: F501=F502=F503=F504= -FFFF-
1164 * BIT 2 - PART 3: F501=0100-01FF,F502=0200-02FF
1165 * F503=0400-04FF,F504=0800-08FF
1166 * BIT 3 - PART 4: F501=0001-FF01,F502=0002-FF02
1167 * F503=0004-FF04,F504=0008-FF08
1168 * BIT 4-7 NOT USED
1169 *
1170 * OUTPUT: ROSSSC WILL CONTAIN THE STARTING COUNT FOR FSG
1171 * ROSSIN WILL CONTAIN THE COUNT INCREMENTING FACTOR
1172 *
1173 *****

```

DATE 07JUL75 25OCT75 15JAN76  
EC NO. 823023 824032 825034

PROG ID 0891-2  
PAGE 9A

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the left page of the diagnostic program.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the right page of the diagnostic program.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for display adapter test, including instructions like XSOFF, X51FF, R06MC1 EQU, etc.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for display adapter test, including instructions like AL2(RT0A), USING R07K01,XR1, etc.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the DISPLAY ADAPTER TEST program, including instructions like USING, LA, MVC, B, DC, and LIO.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the DISPLAY ADAPTER TEST program, including instructions like DC, B, DC, LIO, and B. Includes comments and error messages.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the left page, including instructions like DC, SIO, SNS, CLC, JE, B, and comments such as 'ERROR HALT -2F-' and 'EXPECTED DATA'.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the right page, including instructions like DC, SIO, SNS, CLC, JE, B, and comments such as 'START OF MICRO CODE' and 'END OF MICROCODE'.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, SYMT, SOURCE STATEMENT. Contains diagnostic test code for display adapter, including instructions like .DISABLE ATTACHMENT, .SET HDB 6-7 = FFFF, and .GO EXECUTE MICROPROGRAM.

0912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, SYMT, SOURCE STATEMENT. Contains diagnostic test code for display adapter, including instructions like .ERROR HALT -42-, .EXPECTED DATA, and .GO TO NEXT ROUTINE.







8912 DISPLAY ADAPTER TEST

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

2093 *-----*
1DEF 2094 R11MCS EQU *
1DEF 5010 1DF0 2095 DC XL2*5010*
1DF1 5001 1DF2 2096 DC XL2*5001*
1DF3 5002 1DF4 2097 DC XL2*5002*
1DF5 5003 1DF6 2098 DC XL2*5003*
1DF7 3205 1DF8 2099 DC XL2*3205*
1DF9 5005 1DFA 2100 DC XL2*5005*
1DFB 3307 1DFC 2101 DC XL2*3307*
1DFD 5007 1DFE 2102 DC XL2*5007*
1DFF 5008 1E00 2103 DC XL2*5008*
1E01 5009 1E02 2104 DC XL2*5009*
1E03 500A 1E04 2105 DC XL2*500A*
1E05 5008 1E06 2106 DC XL2*5008*
1E07 500C 1E08 2107 DC XL2*500C*
1E09 500D 1E0A 2108 DC XL2*500D*
1E0B 500E 1E0C 2109 DC XL2*500E*
1E0D 500F 1E0E 2110 DC XL2*500F*
1E0F 7000 1E10 2111 DC XL2*7000*
1E11 7101 1E12 2112 DC XL2*7101*
1E13 7202 1E14 2113 DC XL2*7202*
1E15 7303 1E16 2114 DC XL2*7303*
1E17 7404 1E18 2115 DC XL2*7404*
1E19 7505 1E1A 2116 DC XL2*7505*
1E1B 7606 1E1C 2117 DC XL2*7606*
1E1D 7707 1E1E 2118 DC XL2*7707*
1E1F 7808 1E20 2119 DC XL2*7808*
1E21 7909 1E22 2120 DC XL2*7909*
1E23 7A0A 1E24 2121 DC XL2*7A0A*
1E25 7B0B 1E26 2122 DC XL2*7B0B*
1E27 7C0C 1E28 2123 DC XL2*7C0C*
1E29 7D0D 1E2A 2124 DC XL2*7D0D*
1E2B 7E0E 1E2C 2125 DC XL2*7E0E*
1E2D 7F0F 1E2E 2126 DC XL2*7F0F*
1E2F 3101 1E30 2127 DC XL2*3101*
1E31 5021 1E32 2128 R11MCE DC XL2*5021*
1E33 5100 1E33 2129 R11MC2 EQU *
1E34 2130 DC XL2*5100*
1E35 3202 1E36 2131 DC XL2*3202*
1E37 5102 1E38 2132 DC XL2*5102*
1E39 5103 1E3A 2133 DC XL2*5103*
1E3B 5104 1E3C 2134 DC XL2*5104*
1E3D 5105 1E3E 2135 DC XL2*5105*
1E3F 5106 1E40 2136 DC XL2*5106*
1E41 5107 1E42 2137 DC XL2*5107*
1E43 310A 1E44 2138 DC XL2*310A*
1E45 5109 1E46 2139 DC XL2*5109*
1E47 3308 1E48 2140 DC XL2*3308*
1E49 5108 1E4A 2141 DC XL2*5108*
1E4B 510C 1E4C 2142 DC XL2*510C*
1E4D 510D 1E4E 2143 DC XL2*510D*
1E4F 510E 1E50 2144 DC XL2*510E*
1E51 510F 1E52 2145 R11MC3 DC XL2*510F*
1E53 5200 1E53 2146 R11MC4 EQU *
1E54 2147 DC XL2*5200*
1E55 5201 1E56 2148 DC XL2*5201*
1E57 3303 1E58 2149 DC XL2*3303*
1E59 5203 1E5A 2150 DC XL2*5203*
1E5B 5204 1E5C 2151 DC XL2*5204*
1E5D 3006 1E5E 2152 DC XL2*3006*
1E5F 5206 1E60 2153 DC XL2*5206*
1E61 5207 1E62 2154 DC XL2*5207*
1E63 5208 1E64 2155 DC XL2*5208*
1E65 5209 1E66 2156 DC XL2*5209*
1E67 520A 1E68 2157 DC XL2*520A*
1E69 520B 1E6A 2158 DC XL2*520B*
1E6B 320E 1E6C 2159 DC XL2*320E*
1E6D 520D 1E6E 2160 DC XL2*520D*

```

```

000 B0S.0 TO ADDRESS 010
001 ERROR, HANG.
002 ERROR, HANG.
003 ERROR, HANG.
004 BR TO ADDRESS 205
005 ERROR, HANG
006 BR TO ADDRESS 307
007 ERROR, HANG
008 ERROR, HANG
009 ERROR, HANG
00A ERROR, HANG
00B ERROR, HANG
00C ERROR, HANG
00D ERROR, HANG
00E ERROR, HANG
00F EXPECTED DATA
010 IC HDB 00=00
011 IC HDB 01=01
012 IC HDB 02=02
013 IC HDB 03=03
014 IC HDB 04=04
015 IC HDB 05=05
016 IC HDB 06=06
017 IC HDB 07=07
018 IC HDB 08=08
019 IC HDB 09=09
01A IC HDB 0A=A
01B IC HDB 0B=B
01C IC HDB 0C=C
01D IC HDB 0D=D
01E IC HDB 0E=E
01F IC HDB 0F=F
020 BR TO ADDRESS 101
021 ERROR, HANG
100 ERROR, HANG
101 BR TO ADDRESS 202.
102 ERROR, HANG
103 ERROR, HANG
104 ERROR, HANG
105 ERROR, HANG
106 ERROR, HANG
107 ERROR, HANG
108 BR TO ADDRESS 10A
109 ERROR, HANG
10A BR TO ADDRESS 30B
10B ERROR, HANG
10C ERROR, HANG
10D ERROR, HANG
10E ERROR, HANG
10F ERROR, HANG
200 ERROR, HANG
201 ERROR, HANG
202 BR TO ADDRESS 303
203 ERROR, HANG
204 ERROR, HANG
205 BR TO ADDRESS 006
206 ERROR, HANG
207 ERROR, HANG
208 ERROR, HANG
209 ERROR, HANG
20A ERROR, HANG
20B ERROR, HANG
20C BR TO ADDRESS 20E
20D ERROR, HANG

```

```

1E6F 300F 1E70 2161 DC XL2*300F*
1E71 520F 1E72 2162 R11MCS DC XL2*520F*
1E73 2163 R11MC6 EQU *
1E74 2164 DC XL2*5300*
1E75 5301 1E76 2165 DC XL2*5301*
1E77 5302 1E78 2166 DC XL2*5302*
1E79 3004 1E7A 2167 DC XL2*3004*
1E7B 5304 1E7C 2168 DC XL2*5304*
1E7D 5305 1E7E 2169 DC XL2*5305*
1E7F 5306 1E80 2170 DC XL2*5306*
1E81 3108 1E82 2171 DC XL2*3108*
1E83 5308 1E84 2172 DC XL2*5308*
1E85 5309 1E86 2173 DC XL2*5309*
1E87 530A 1E88 2174 DC XL2*530A*
1E89 320C 1E8A 2175 DC XL2*320C*
1E8B 530C 1E8C 2176 DC XL2*530C*
1E8D 530D 1E8E 2177 DC XL2*530D*
1E8F 530E 1E90 2178 DC XL2*530E*
1E91 530F 1E92 2179 R11MC7 DC XL2*530F*
2180
2180 *****
2182 * ROUTINE 14 - INC MICRO INSTRUCTION TEST *
2183 *****
2184 *
2185 * THIS ROUTINE TESTS THE INC MICRO INSTRUCTION. ALL COMBINATIONS*
2186 * OF INCREMENT FROM 1-256 ARE TRIED. *
2187 *
2188 *****
2189
1E93 14 1E94 2190 RT14 DC XL1*14*
1E94 00 1E95 2191 DC XL1*00*
1E95 1F27 1E96 2192 DC AL2(RT15)
2193
1E97 C2 01 1EAB 1EAB 2194 USING R12K01,XR1
2195 LA R12K01,XR1
2196
1E98 1C 05 5A38 22 2197 MVC MICOP,RT120P(6,XR1)
1E99 C0 87 021A 2198 B PRINT
1EA0 01 1EA4 2199 DC XL1*01*
1EA5 19 1EA5 2200 DC IL1*25*
1EA6 5A46 1EA7 2201 DC AL2(MICPRT)
2202
1EA8 C0 87 5918 2203 R12K01 B LOADCS
1EAC 91 1EAC 2204 DC XL1*91*
1EAD 1ECB 1EAE 2205 DC AL2(R12MCS)
1EAF 1F02 1EB0 2206 DC AL2(R12MCE)
1EB1 C0 87 5918 2207 B LOADCS
1EB5 A2 1EB5 2208 DC XL1*A2*
1EB6 1F03 1EB7 2209 DC AL2(R12MC2)
1EB8 1F26 1EB9 2210 DC AL2(R12MC3)
2211
1EBA C0 87 54FE 2212 B DOMICR
1EBE 50 1EBE 2213 DC XL1*50*
1EBF 501B 1ECO 2214 DC XL2*501B*
2215
1EC1 C0 87 0216 2216 B LINK
2217
1ECS F1F440C9D5C3 1ECA 2218 RT120P DC CL6*14 INC*
2219
2220 *****
2221 * START OF MICROPROGRAM LISTING *
2222 *****
1ECB 2223 R12MCS EQU *
1ECC 2224 DC XL2*7A00* 00 IC, SET HDB A = 00
1ECD 7704 1ECE 2225 DC XL2*7704* 01 IC, PUT RETURN ADDR IN HDB 7
1ECF 7600 1ED0 2226 DC XL2*7600* 02 IC, SET HDB 6 = 00
1ED1 5100 1ED2 2227 DC XL2*5100* 03 B0S.0 BRANCH TO INCREMENT ROUTINE

```

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
1ED3 EA10 1ED4 2228 DC XL2\*EA10\* 04 CI. HDB A MUST HAVE 10 IN IT  
1ED5 9C07 1ED6 2229 DC XL2\*9C07\* 05 BOC.3 MUST BRANCH  
1ED7 5006 1ED8 2230 DC XL2\*5006\* 06 ERROR. HANG  
1ED9 7B01 1EDA 2231 DC XL2\*7B01\* 07 IC. SET HDB B = 01  
1EDB 770A 1EDC 2232 DC XL2\*770A\* 08 IC. PUT RETURN ADDR IN HDB 7  
1EDD 5100 1EDE 2233 DC XL2\*5100\* 09 BOS.0 BRANCH TO INCREMENT ROUTINE  
1EDF 1B10 1EE0 2234 DC XL2\*1B10\* 0A INCREMENT HDB B  
1EE1 1B40 1EE2 2235 DC XL2\*1B40\* 0B SHIFT HDB B LEFT  
1EE3 1B40 1EE4 2236 DC XL2\*1B40\* 0C 4 TIMES  
1EE5 1B40 1EE6 2237 DC XL2\*1B40\* 0D  
1EE7 1B40 1EE8 2238 DC XL2\*1B40\* 0E  
1EE9 9418 1EEA 2239 DC XL2\*9418\* 0F BRANCH TO END IF HI BITS = 0  
1EEB 8A0B 1EEC 2240 DC XL2\*8A0B\* 10 CIR. COMPARE FOR CORRECT RESULT  
1EEC 9C13 1EEE 2241 DC XL2\*9C13\* 11 WILL BRANCH IF OKAY  
1EEF 5012 1EF0 2242 DC XL2\*5012\* 12 ERROR. HANG  
1EF1 1B40 1EF2 2243 DC XL2\*1B40\* 13 SHIFT HDB B AROUND AGAIN  
1EF3 1B40 1EF4 2244 DC XL2\*1B40\* 14  
1EF5 1B40 1EF6 2245 DC XL2\*1B40\* 15  
1EF7 1B40 1EF8 2246 DC XL2\*1B40\* 16  
1EF9 5100 1EFA 2247 DC XL2\*5100\* 17 RETURN TO INCREMENT ROUTINE  
1EFB EA00 1EFC 2248 DC XL2\*EA00\* 18 END. TEST THAT HDB A = 00  
1EFD 9C1B 1EFE 2249 DC XL2\*9C1B\* 19 MUST BRANCH  
1EFF 501A 1F00 2250 DC XL2\*501A\* 1A ERROR. HANG  
1F01 501B 1F02 2251 R12MCE DC XL2\*501B\* 1B HANG. END OF TEST  
2252  
1F03 1A10 1F04 2253 R12MC2 EQU \*  
1F05 1A10 1F06 2254 DC XL2\*1A10\* 100 INCREMENT ROUTINE. INCREMENTS HDB A  
1F07 1A10 1F08 2255 DC XL2\*1A10\* 101 16 TIMES AND RETURNS TO MAIN ROUTINE.  
1F09 1A10 1F0A 2256 DC XL2\*1A10\* 102  
1F0B 1A10 1F0C 2257 DC XL2\*1A10\* 103  
1F0D 1A10 1F0E 2258 DC XL2\*1A10\* 104  
1F0F 1A10 1F10 2259 DC XL2\*1A10\* 105  
1F11 1A10 1F12 2260 DC XL2\*1A10\* 106  
1F13 1A10 1F14 2261 DC XL2\*1A10\* 107  
1F15 1A10 1F16 2262 DC XL2\*1A10\* 108  
1F17 1A10 1F18 2263 DC XL2\*1A10\* 109  
1F19 1A10 1F1A 2264 DC XL2\*1A10\* 10A  
1F1B 1A10 1F1C 2265 DC XL2\*1A10\* 10B  
1F1D 1A10 1F1E 2266 DC XL2\*1A10\* 10C  
1F1F 1A10 1F1F 2267 DC XL2\*1A10\* 10D  
1F20 1A10 1F20 2268 DC XL2\*1A10\* 10E  
1F21 1A10 1F21 2269 DC XL2\*1A10\* 10F  
1F23 3607 1F24 2270 DC XL2\*3607\* 110 BR. RETURN TO MAIN ROUTINE  
1F25 5111 1F26 2271 R12MC3 DC XL2\*5111\* 111 ERROR. HANG  
2272  
2273 \*\*\*\*\*  
2274 \* ROUTINE 15 - LR MICRO INSTRUCTION TEST  
2275 \*\*\*\*\*  
2276 \* THIS ROUTINE CHECKS THE LR MICRO INSTRUCTION WITHIN THE  
2277 \* HDB'S ONLY. THE ABILITY TO LOAD FROM AND TO EXTERNALS  
2278 \* WILL BE CHECKED LATER.  
2279 \* LR CK OF 1ST HDB ONLY  
2280 \*\*\*  
2281 \*  
2282 \*\*\*\*\*  
2283  
1F27 15 1F27 2284 RT15 DC XL1\*15\* ROUTINE NUMBER  
1F28 00 1F28 2285 DC XL1\*00\* NO MANUAL INTERVENTION  
1F29 1FA 1F2A 2286 DC AL2(RT16) ADDRESS OF NEXT ROUTINE  
2287  
1F2B C2 01 1F3C 1F3C 2288 USING R13K01,XR1 INITIALIZE XR1 FOR INDEXING  
2289 LA R13K01,XR1  
2290  
1F2F 1C 05 5A38 19 2291 MVC MICOP,RT13OP(6,XR1) MOVE OP BEING TESTED TO  
1F34 C0 87 021A 2292 B PRINT PRINT ROUTINE HEADING  
1F38 01 1F38 2293 DC XL1\*01\*  
1F39 19 1F39 2294 DC IL1\*25\*

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT  
1F3A 5A46 1F3B 2295 DC AL2(MICPRT)  
2296  
1F3C C0 87 5918 2297 R13K01 B LOADDCS .GO LOAD MICROPROGRAM  
1F40 83 1F40 2298 DC XL1\*83\* .DISABLE UPON ENTRY, FILL 2ND  
2299 \* FSO WITH BCS.0 ON ADDRESS  
1F41 1F56 1F42 2300 DC AL2(R13MCS) .START OF MICRO CODE  
1F43 1FA3 1F44 2301 DC AL2(R13MCE) .END OF MICROCODE  
2302  
1F45 C0 87 54FE 2303 B DOMICR .GO EXECUTE MICROPROGRAM  
1F49 52 1F49 2304 DC XL1\*52\* .ERROR HALT -52-  
1F4A 5026 1F4B 2305 DC XL2\*5026\* .EXPECTED RESULT  
2306  
2307 B LINK .GO TO NEXT ROUTINE  
2308  
1F50 F1F54040D3D9 1F55 2309 RT13OP DC CL6\*15 LR\*  
2310  
2311 \*-----\*  
2312 \* START OF MICROPROGRAM LISTING \*  
2313 \*-----\*  
1F56 2314 R13MCS EQU \*  
1F57 2315 DC XL2\*73AA\* 00 IC. SET HDB 03 = AA  
1F59 2316 DC XL2\*7155\* 01 IC. SET HDB 01 = 55  
1F5A 2F03 1F5B 2317 DC XL2\*2F03\* 02 LR. SET HDB 0F = AA FROM HDB 03  
1F5C EF55 1F5D 2318 DC XL2\*EF55\* 03 CI. CHECK THAT HDB 0F IS = AA  
1F5E 9C06 1F5F 2319 DC XL2\*9C06\* 04 BOS.3 MUST BRANCH  
1F60 5005 1F61 2320 DC XL2\*5005\* 05 ERROR. HANG  
1F62 2F01 1F63 2321 DC XL2\*2F01\* 06 LR. SET HDB 0F = 55 FROM HDB 01  
1F64 EF55 1F65 2322 DC XL2\*EF55\* 07 CI. CHECK THAT HDB 0F = 55  
1F66 9C0A 1F67 2323 DC XL2\*9C0A\* 08 BOC.3 MUST BRANCH  
1F68 5009 1F69 2324 DC XL2\*5009\* 09 ERROR. HANG  
1F6A 202F 1F6A 2325 DC XL2\*202F\* 0A LR. SET HDB 10 = 55 FROM HDB 0F  
1F6C E3AA 1F6D 2326 DC XL2\*E3AA\* 0B CI. CHECK THAT HDB 03 DID NOT CHANGE  
1F6E 9C0E 1F6E 2327 DC XL2\*9C0E\* 0C BOC.3 MUST BRANCH  
1F70 500D 1F71 2328 DC XL2\*500D\* 0D ERROR. HANG  
1F72 75FF 1F73 2329 DC XL2\*75FF\* 0E IC. SET HDB 5 = FF  
1F74 2510 1F75 2330 DC XL2\*2510\* 0F LR. SET HDB 05 = 55 FROM HDB 10  
1F76 E555 1F77 2331 DC XL2'E555\* 10 CI. CHECK HDB 05 = 55  
1F78 9C13 1F79 2332 DC XL2\*9C13\* 11 BOC.3 MUST BRANCH  
1F7A 5012 1F7A 2333 DC XL2\*5012\* 12 ERROR. HANG  
1F7C 76FF 1F7D 2334 DC XL2\*76FF\* 13 IC. SET HDB 06 = FF  
1F7E 2623 1F7E 2335 DC XL2\*2623\* 14 LR. SET HDB 16 = AA FROM HDB 03  
1F80 E6FF 1F81 2336 DC XL2'E6FF\* 15 CI. CHECK THAT HDB 06 STILL IS FF  
1F82 9C18 1F83 2337 DC XL2\*9C18\* 16 BOC.3 MUST BRANCH  
1F84 5017 1F85 2338 DC XL2\*5017\* 17 ERROR. HANG  
1F86 2616 1F86 2339 DC XL2\*2616\* 18 LR. SET HDB 06 = AA FROM HDB 16  
1F88 E6AA 1F89 2340 DC XL2'E6AA\* 19 CI. CHECK 06 = AA  
1F8A 9C1C 1F8A 2341 DC XL2\*9C1C\* 1A BOC.3 MUST BRANCH  
1F8C 501B 1F8C 2342 DC XL2\*501B\* 1B ERROR. HANG  
1F8E 2430 1F8E 2343 DC XL2\*2430\* 1C LR. SET HDB 14 = 55 FROM HDB 10  
1F90 2614 1F91 2344 DC XL2\*2614\* 1D LR. SET HDB 06 = 55 FROM HDB 14  
1F92 E655 1F93 2345 DC XL2'E655\* 1E CI. CHECK THAT HDB 06 = 55  
1F94 9C21 1F95 2346 DC XL2\*9C21\* 1F BOC.3 MUST BRANCH  
1F96 5020 1F97 2347 DC XL2\*5020\* 20 ERROR. HANG  
1F98 2436 1F99 2348 DC XL2\*2436\* 21 LR. SET HDB 16 = AA FROM HDB 14  
1F9A 2616 1F9A 2349 DC XL2\*2616\* 22 LR. SET HDB 06 = AA FROM HDB 16  
1F9C E6AA 1F9D 2350 DC XL2'E6AA\* 23 CI. CHECK THAT HDB 06 = AA  
1F9E 9C26 1F9E 2351 DC XL2\*9C26\* 24 BOC.3 MUST BRANCH  
1FA0 5025 1FA1 2352 DC XL2\*5025\* 25 ERROR. HANG  
1FA2 5026 1FA3 2353 R13MCE DC XL2\*5026\* 26 HANG. TEST COMPLETED  
2354  
2355 \*\*\*\*\*  
2356 \* ROUTINE 16 - TSN MICRO INSTRUCTION TEST  
2357 \*\*\*\*\*  
2358 \* THIS ROUTINE TESTS THE BASIC TSN'S WHICH ARE IN A KNOWN  
2359 \* QUIESCENT STATE. OTHER TSN'S WILL BE CHECKED LATER.  
2360 \*  
2361 \*

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for routine 17, including instructions like RT16, DC, XL1, LA, USING, MVC, B, PRINT, MVR, and LOADCS.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for routine 18, including instructions like RT15OP, DC, XL2, B, LINK, and R15MCS EQU.



8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
2152	19	2152	DC	XL1'19'
2153	00	2153	DC	XL1'00'
2154	2228	2155	DC	AL2(RT1A)
2156	C0 87 021A	2592	B	PRINT
215A	01	215A	DC	XL1'01'
215B	14	215B	DC	IL1'20'
215C	2175	215D	DC	AL2(R3AMDR)
215E	C0 87 2176	2597	B	R3AGO
2162	D9D6E4E340F1F548	2175	DC	CL20'ROUT 19, LE OP/LR OP'
216A	40D3C540D6D76 JD3	2598	B	R3AGO
2172	D940D6D7	2598	B	R3AGO
2176	C0 87 5918	2599	B	R3AGO
217A	83	217A	DC	XL1'83'
217B	218A	217C	DC	AL2(R3AMCS)
217D	21DF	217E	DC	AL2(R3AMCE)
217F	C0 87 54FE	2603	B	DOMICR
2183	3A	2183	DC	XL1'3A'
2184	502A	2185	DC	XL2'502A'
2186	C0 87 21E0	2606	B	RT3AP2
218A	7605	2188	DC	XL2'7605'
218C	7715	218D	DC	XL2'7715'
218E	7825	218F	DC	XL2'7825'
2190	7935	2191	DC	XL2'7935'
2192	7002	2193	DC	XL2'7002'
2194	7100	2195	DC	XL2'7100'
2196	7C22	2197	DC	XL2'7C22'
2198	2506	2199	DC	XL2'2506'
219A	2527	219B	DC	XL2'2527'
219C	2588	219D	DC	XL2'2588'
219E	25A9	219F	DC	XL2'25A9'
21A0	058C	21A1	DC	XL2'058C'
21A2	8506	21A3	DC	XL2'8506'
21A4	9000	21A5	DC	XL2'9000'
21A6	B527	21A7	DC	XL2'B527'
21A8	900F	21A9	DC	XL2'900F'
21AA	B588	21AB	DC	XL2'B588'
21AC	9011	21AD	DC	XL2'9011'
21AE	B5A9	21AF	DC	XL2'B5A9'
21B0	9013	21B1	DC	XL2'9013'
21B2	0D45	21B3	DC	XL2'0D45'
21B4	8D0C	21B5	DC	XL2'8D0C'
21B6	9016	21B7	DC	XL2'9016'
21B8	7650	21B9	DC	XL2'7650'
21BA	7751	21BB	DC	XL2'7751'
21BC	7852	21BD	DC	XL2'7852'
21BE	7953	21BF	DC	XL2'7953'
21C0	25A9	21C1	DC	XL2'25A9'
21C2	2588	21C3	DC	XL2'2588'
21C4	2527	21C5	DC	XL2'2527'
21C6	2506	21C7	DC	XL2'2506'
21C8	0E45	21C9	DC	XL2'0E45'
21CA	8E0C	21CB	DC	XL2'8E0C'
21CC	9021	21CD	DC	XL2'9021'
21CE	8506	21CF	DC	XL2'8506'
21D0	9023	21D1	DC	XL2'9023'
21D2	8527	21D3	DC	XL2'8527'
21D4	9025	21D5	DC	XL2'9025'
21D6	B588	21D7	DC	XL2'B588'
21D8	9027	21D9	DC	XL2'9027'

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
21DA	B5A9	21DB	DC	XL2'B5A9'
21DC	9029	21DD	DC	XL2'9029'
21DE	502A	21DF	DC	R3AMCE DC XL2'502A'
21E0	F3 58 80	2656	B	* BEGIN PART 2 OF ROUTINE
21E3	31 48 0D56	2657	RT3AP2	SIO X'80',SIOI
21E7	F3 58 C0	2658	LIO	XAA55,HDB0
21EA	31 48 0D59	2659	SIO	X'C0',SIOI
21EE	C0 87 5918	2660	LIO	X'FFFF',HDE0
21F2	83	2661	B	LOADCS
21F3	2202	21F2	DC	XL1'83'
21F5	2227	21F4	DC	AL2(R3AMC1)
21F7	C0 87 54FE	21F6	DC	AL2(R3AMC2)
21FB	3C	2665	B	COMICR
21FC	5012	21FB	DC	XL1'3C'
21FE	C0 87 0216	21FD	DC	XL2'5012'
2202	E0AA	2668	B	LINK
2204	9C03	2669	B	
2206	5002	2670	B	
2208	E155	2671	B	
220A	9C06	2672	B	
220C	5005	2673	B	
220E	B040	2674	B	
2210	9C09	2675	B	
2212	5008	2676	B	
2214	B141	2677	B	
2216	9C0C	2678	B	
2218	5008	2679	B	
221A	B070	2680	B	
221C	9C0F	2681	B	
221E	500E	2682	B	
2220	B171	2683	B	
2222	9C12	2684	B	
2224	5011	2685	B	
2226	5012	2686	B	
2228	1A	2687	B	
2229	00	2688	B	
222A	22F1	2689	B	
222C	C0 87 021A	2690	B	
2230	01	2691	B	
2231	1B	2692	B	
2232	2252	2693	B	
2234	C0 87 2253	2694	B	
2238	D9D6E4E340F1C J40	2695	B	
2240	C1C4C4D9C5E2E 2C9	2696	B	
2248	D5C740C1C2D6E 5C5	2697	B	
2250	40F1D2	2698	B	
2253	C0 87 5918	2699	B	
2257	9F	2700	B	
2258	227D	2701	B	
2259	2716	2702	B	

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including microprogram listings starting at 2732 and 2772.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including microprogram listings starting at 2803 and 2821.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for display adapter testing, including instructions like SBN, MOV, DC, and comments such as 'PREPARATION OF ERROR PRINTOUT' and 'START OF MICROPROGRAM LISTING'.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for display adapter testing, including instructions like DC, XL2, and comments such as 'ROUTINE 1C EXPANDED HDB ADDRESSING' and 'START OF MICROPROGRAM LISTING'.

8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
24D9	7455	24DA	2972	DC XL2'7455' 005 IC MDB 04=55
24DB	8413	24DC	2973	DC XL2'8413' 006 CIR 04.13
24DD	9C09	24DE	2974	DC XL2'9C09' 007 BOC.3 TO ADDR 009
24DF	5008	24E0	2975	DC XL2'5008' 008 ERROR, HANG
24E1	2323	24E2	2976	DC XL2'2323' 009 LR MDB 03 TO MDB 13
24E3	8413	24E4	2977	DC XL2'8413' 00A CIR 04.13
24E5	9C16	24E6	2978	DC XL2'9C16' 00B BOC.3 SHLD NOT BR TO ADDR 016
24E7	8443	24E8	2979	DC XL2'8443' 00C CIR 04.23
24E9	9C0F	24EA	2980	DC XL2'9C0F' 00D BOC.3 TO ADDR 00F
24EB	500E	24EC	2981	DC XL2'500E' 00E ERROR, HANG
24ED	232E	24EE	2982	DC XL2'232E' 00F LR 03 TO 23
24EF	8443	24F0	2983	DC XL2'8443' 010 CIR 04.23
24F1	9C17	24F2	2984	DC XL2'9C17' 011 BOC.3 SHLD NOT BR TO ADDR 017
24F3	83A4	24F4	2985	DC XL2'83A4' 012 CIR 33.04
24F5	9C15	24F6	2986	DC XL2'9C15' 013 BOC.3 TO ADDR 015
24F7	5014	24F8	2987	DC XL2'5014' 014 ERROR, HANG
24F9	5015	24FA	2988	DC XL2'5015' 015 EXPECTED RESULTS
24FB	5016	24FC	2989	DC XL2'5016' 016 ERROR, HANG
24FD	5017	24FE	2990	DC XL2'5017' 017 ERROR, HANG

8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
24FF	1D	24FF	2995	RT1D DC XL1'1D'	
2500	00	2500	2996	DC XL1'00'	
2501	2503	2502	2997	DC AL2(RT1E)	
2503	C0 87 021A	2503	2998	B PRINT	
2507	01	2507	3000	DC XL1'01'	
2508	20	2508	3001	DC IL1'32'	
2509	252E	250A	3002	DC AL2(R31HDR)	
250B	C0 87 252F	250B	3003	B RT31GO	
250F	D9D6EAE340F1C440	252E	3004	R31HDR DC CL32'ROUT 1D MDB 10-3F ADDR; SHIFT OP'	
2517	C8C4C240F1F06F3	3004	3004		
251F	C640C1C4C4D95240	3004	3004		
2527	E2C8C9C6E340B4D7	3004	3004		
252F	C0 87 5918	3005	RT31GO B	LOADCS GO LOAD MICROPROGRAM	
2533	83	2533	3006	DC XL1'83'	DISABLE UPON ENTRY. FILL SECOND
2534	2543	2535	3008	DC AL2(R31MCS)	F80 WITH B05.0 ON ADDRESS.
2536	2582	2537	3009	DC AL2(R31MCE)	START OF MICROCODE
2538	C0 87 54FE	3010	3010	B CONNICR	END OF MICROCODE
253C	31	253C	3011	DC XL1'31'	GO ON MICROCODE
253D	5018	253E	3012	DC XL2'5018'	ERROR HALT -31-
253F	C0 87 0216	3013	3013	B LINK	EXPECTED RESULTS
3014	*	3014	*		GO TO NEXT ROUTINE
3015	*	3015	*		
3016	*	3016	*		
3017	*	3017	*		
2543	75AA	2544	3018	R31MCS EQU *	
2545	2525	2546	3020	DC XL2'2525' 001	MDB 05=AA
2547	2585	2548	3021	DC XL2'2585' 002	LR MDB 05 TO 15
2549	25A5	254A	3022	DC XL2'25A5' 003	LR MDB 05 TO 25
254B	7501	254C	3023	DC XL2'7501' 004	LR MDB 05 TO 35
254D	76AA	254E	3024	DC XL2'76AA' 005	IC MDB 05=01
254F	7755	2550	3025	DC XL2'7755' 006	IC MDB 06=AA
2551	8615	2552	3026	DC XL2'8615' 007	IC MDB 07=55
2553	9008	2554	3027	DC XL2'9008' 008	CIR 06.15
2555	1560	2556	3028	DC XL2'1560' 009	BOC.0 ERROR, HANG
2557	8715	2558	3029	DC XL2'8715' 00A	SL 15 SHIFT MDB 15. NOW=55
2559	9008	255A	3030	DC XL2'9008' 00B	CIR 07.15
255B	8615	255C	3031	DC XL2'8615' 00C	BOC.0 ERROR, HANG
255D	9C0D	255E	3032	DC XL2'9C0D' 00D	CIR.06.15
255F	15C0	2560	3033	DC XL2'15C0' 00E	BOC.3 ERROR, HANG
2561	8745	2562	3034	DC XL2'8745' 00F	SL 25 SHFT MDB 25. NOW=55
2563	9C10	2564	3035	DC XL2'9C10' 010	CIR 07.25
2565	8586	2566	3036	DC XL2'8586' 011	BOC.0 ERROR, HANG
2567	9C12	2568	3037	DC XL2'9C12' 012	CIR 25.06
2569	15E0	256A	3038	DC XL2'15E0' 013	BOC.3 ERROR, HANG
256B	8745	256C	3039	DC XL2'8745' 014	SL 35 SHIFT MDB 35 NOW=55
256D	9015	256E	3040	DC XL2'9015' 015	CIR 07.25
256F	8655	2570	3041	DC XL2'8655' 016	BOC.0 ERROR, HANG
2571	9C17	2572	3042	DC XL2'9C17' 017	CIR 06.35
2573	5018	2574	3043	DC XL2'5018' 018	BOC.3 SHLD NOT BR TC SELF
2575	5019	2576	3044	DC XL2'5019' 019	B05.0 EXPECTED RESULTS
2577	501A	2578	3045	DC XL2'501A' 01A	B05.0 ERROR, HANG
2579	501B	257A	3046	DC XL2'501B' 01B	B05.0 ERROR, HANG
257B	501C	257C	3047	DC XL2'501C' 01C	B05.0 ERROR, HANG
257D	501D	257E	3048	DC XL2'501D' 01D	B05.0 ERROR, HANG
257F	501E	2580	3049	DC XL2'501E' 01E	B05.0 ERROR, HANG
2581	501F	2582	3050	DC XL2'501F' 01F	B05.0 ERROR, HANG
3051	*	3051	*		



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ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
			3053		*****
			3054		* ROUTINE 1E EXPANDED HCB ADDR. (10-TO-3F) USING XR, TBFR, INC OPS. *
			3055		*****
2583	1E		2583	3056	RT1E DC XL1'1E' ROUT NO.
2584	00		2584	3057	DC XL1'00' NO MANUAL INTERVENTION
2585	2634		2586	3058	DC AL2(RT1F) ADDR OF NEXT ROUTINE
			3059	*	
2587	C0 87 021A		3060	B	PRINT
2588	01		2585	3061	DC XL1'01' PRINT ROUTINE HEADING
258C	29		258C	3062	DC IL1'41'
258D	258B		258E	3063	DC AL2(R32HDR)
258F	C0 87 258C		3064	B	RT32G0
2593	D9D6E4E340F1C540		258B	3065	R32HDR DC GL41'ROUT 1E HCB 10-3F ADDR; XR, TBFR, INC OPS'
259B	C8C4C240F1F06F3		3065		
25A3	C640C1C4C4D95E40		3065		
25AB	E7D96B40E3C2C4D9		3065		
25B3	6840C9D5EC340D4D7		3065		
25BB	E2		3065		
25BC	C0 87 5918		3066	RT32G0 B	LOADCS
25C0	83		25C0	3067	DC XL1'83' GO LOAD MICROPROGRAM
			3068	*	DISABLE UPON ENTRY, FILL 2ND F50
25C1	25D0		25C2	3069	DC AL2(R32MCS) WITH BOS=0 ON ADDRESS
25C3	2633		25C4	3070	DC AL2(R32MCE) START OF MICROPROGRAM
25C5	C0 87 54FE		3071	B	DOM1CR
25C9	32		25C9	3072	DC XL1'32' GO EXECUTE MICROPROGRAM
25CA	5031		25CB	3073	DC XL2'5031' ERROR HALT -32-
25CC	C0 87 0216		3074	B	LINK EXPECTED RESULTS
			25D0	3075	R32MCS EQU * GO TO NEXT ROUTINE
			3076		*****
			3077		* START OF MICROPROGRAM LISTING *
			3078		*****
25D0	7404		25D1	3079	DC XL2'7404' 000 IC HDB 04=04
25D2	7105		25D3	3080	DC XL2'7105' 001 IC HDB 01=05
25D4	7206		25D5	3081	DC XL2'7206' 002 IC HDB 02=06
25D6	2321		25D7	3082	DC XL2'2321' 003 LR HDB 01 TO 13
25D8	2422		25D9	3083	DC XL2'2422' 004 LR HDB 02 TO 14
25DA	26B1		25DB	3084	DC XL2'26B1' 005 LR HDB 01 TO 26
25DC	2762		25DD	3085	DC XL2'2762' 006 LR HDB 02 TO 27
25DE	2AA1		25DE	3086	DC XL2'2AA1' 007 LR HDB 01 TO 3A
25E0	2BA2		25E1	3087	DC XL2'2BA2' 008 LR HDB 02 TO 3B
25E2	8324		25E3	3088	DC XL2'8324' 009 TBFR 13,04
25E4	9C0A		25E5	3089	DC XL2'9C0A' 00A BOC,3 SHLD NOT BR TO SELF.
25E6	A334		25E7	3090	DC XL2'A334' 00B XR 13,14 13 NOW=03
25E8	8324		25E9	3091	DC XL2'8324' 00C TBFR 13,04
25EA	9000		25EB	3092	DC XL2'9000' 00D BOC,0 SHLD NOT BR TO SELF.
25EC	1330		25ED	3093	DC XL2'1330' 00E INC 13 TO=04
25EE	8324		25EF	3094	DC XL2'8324' 00F TBFR 13,04
25F0	9C10		25F1	3095	DC XL2'9C10' 010 BOC,3 SHLD NOT BR TO SELF.
25F2	8684		25F3	3096	DC XL2'8684' 011 TBFR 26,04
25F4	9C12		25F5	3097	DC XL2'9C12' 012 BOC,3 SHLD NOT BR TO SELF.
25F6	A6C7		25F7	3098	DC XL2'A6C7' 013 XR 26,27 26 NOW=03
25F8	8684		25F9	3099	DC XL2'8684' 014 TBFR 26,04
25FA	9015		25FB	3100	DC XL2'9015' 015 BOC,0 SHLD NOT BR TO SELF.
25FC	1690		25FD	3101	DC XL2'1690' 016 INC 26 TO=04
25FE	8684		25FF	3102	DC XL2'8684' 017 TBFR 26,04
2600	9C18		2601	3103	DC XL2'9C18' 018 BOC,3 SHLD NOT BR TO SELF.
2602	8AA4		2603	3104	DC XL2'8AA4' 019 TBFR 3A,04
2604	9C1A		2605	3105	DC XL2'9C1A' 01A BOC,3 SHLD NOT BR TO SELF.
2606	AAFB		2607	3106	DC XL2'AAFB' 01B XR 3A,3B 3A NOW=03
2608	8AA4		2609	3107	DC XL2'8AA4' 01C TBFR 3A,04
260A	901D		260B	3108	DC XL2'901D' 01D BOC,0 SHLD NOT BR TO SELF.
260C	1AB0		260D	3109	DC XL2'1AB0' 01E INC 3A TO=04
260E	8AA4		260F	3110	DC XL2'8AA4' 01F TBFR 3A,04
2610	9C20		2611	3111	DC XL2'9C20' 020 BOC,3 SHLD NOT BR TO SELF.
2612	7E01		2613	3112	DC XL2'7E01' 021 IC HDB 0E=01
2614	8E14		2615	3113	DC XL2'8E14' 022 TBFR 0E,14
2616	9023		2617	3114	DC XL2'9023' 023 BOC,0 SHLD NOT BR TO SELF.
2618	1430		2619	3115	DC XL2'1430' 024 INC 14

ERR	LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
			261A	8E14	261B 3116 DC XL2'8E14' 025 TBFR 0E,14
			261C	9C26	261D 3117 DC XL2'9C26' 026 BOC,3 SHLD NOT BR TO SELF.
			261E	8E47	261F 3118 DC XL2'8E47' 027 TBFR 0E,27
			2620	9028	2621 3119 DC XL2'9028' 028 BOC,0 SHLD NOT BR TO SELF
			2622	1790	2623 3120 DC XL2'1790' 029 INC 27
			2624	8E47	2625 3121 DC XL2'8E47' 02A TBFR 0E,27
			2626	9C2B	2627 3122 DC XL2'9C2B' 02B BOC,3 SHLD NOT BR TO SELF
			2628	8E5B	2629 3123 DC XL2'8E5B' 02C TBFR 0E,3B
			262A	902D	262B 3124 DC XL2'902D' 02D BOC,0 SHLD NOT BR TO SELF
			262C	18B0	262D 3125 DC XL2'18B0' 02E INC 3B
			262E	8E5B	262F 3126 DC XL2'8E5B' 02F TBFR 0E,3B
			2630	9C30	2631 3127 DC XL2'9C30' 030 BOC,3 SHLD NOT BR TO SELF
			2632	5031	2633 3128 R32MCE DC XL2'5031' 031 BOS,0 EXPECTED RESULTS
					3129 *

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		3131			*****
		3132	*		ROUTINE 1F EXPANDED MCB ADDR.(10-TO-3F) USING BR OP.
		3133			*****
2634	1F	2634	3134	RT1F DC	XL1'1F' ROUT NO.
2635	00	2635	3135	DC	XL1'00' NO MANUAL INTERVENTION
2636	26B8	2637	3136	DC	AL2(RT20) ADDR OF NEXT ROUTINE
		3137	*		
2638	CO 87 021A	3138	B	PRINT	PRINT ROUTINE HEADING
263C	01	263C	3139	DC	XL1'01'
263D	1D	263D	3140	DC	IL1'29'
263E	2660	263F	3141	DC	AL2(R33HDR)
2640	CO 87 2661	3142	B	RT33GD	
2644	D9D6E4E340F1C 440	2660	3143	R33HDR DC	CL29'ROUT 1F HDB 10-3F ADDR; BR OP'
264C	C8C4C240F1F06 0F3	3143			
2654	C640C1C4C4D95 E40	3143			
265C	C2D94006D7	3143			
2661	CO 87 5918	3144	RT33GO B	LOADCS	GO LOAD MICROPROGRAM
2665	91	2665	3145	DC	XL1'91'
2666	267E	2667	3146	DC	AL2(R33MCS)
2668	2699	2669	3147	DC	AL2(R33MCE)
266A	CO 87 5918	3148	B	LOADCS	GO LOAD MICROCODE
266E	A2	266E	3149	DC	XL1'A2'
266F	269A	2670	3150	DC	AL2(R33MC1)
2671	2687	2672	3151	DC	AL2(R33MC2)
2673	CO 87 54FE	3152	B	DOMICR	GO DO MICR CODE
2677	33	2677	3153	DC	XL1'33'
2678	5107	2679	3154	DC	XL2'5107'
267A	CO 87 0216	3155	B	LINK	EXIT ROUTINE
		3156	*		*****
		3157	*		START OF MICROPROGRAM LISTING *
		3158	*		*****
267E	7101	267E	3159	R33MCS EQU *	
2680	7202	267F	3160	DC	XL2'7101' 000 IC HDB 01=01
2682	7303	2681	3161	DC	XL2'7202' 001 IC HDB 02=02
2684	740D	2683	3162	DC	XL2'7303' 002 IC HDB 03=03
2686	2521	2685	3163	DC	XL2'740D' 003 IC HDB 04=00
2688	2622	2687	3164	DC	XL2'2521' 004 LR HDB 01 TO 15. HDB 15 NOW=01
268A	2723	2689	3165	DC	XL2'2622' 005 LR HDB 02 TO 16. HDB 16 NOW=02
268C	2824	2688	3166	DC	XL2'2723' 006 LR HDB 03 TO 17. HDB 17 NOW=03
268E	2981	268D	3167	DC	XL2'2824' 007 LR HDB 04 TO 18. HDB 18 NOW=00
2690	2A82	268F	3168	DC	XL2'2981' 008 LR HDB 01 TO 29. HDB 29 NOW=01
2692	2BA3	2691	3169	DC	XL2'2A82' 009 LR HDB 02 TO 2A. HDB 2A NOW=02
2694	2CA1	2693	3170	DC	XL2'2BA3' 00A LR HDB 03 TO 3B. HDB 3B NOW=03
2696	3538	2695	3171	DC	XL2'2CA1' 00B LR HDB 01 TO 3C. HDB 3C NOW=01
2698	500D	2697	3172	DC	XL2'3538' 00C BR 15,18 TO ADDRESS 100
		2699	3173	R33MCE DC	XL2'500D' 00D B05,0 ERROR. HANG
		3174	*		
269A	5100	269A	3175	R33MC1 EQU *	
269C	357B	269B	3176	DC	XL2'5100' 100 B05,0 ERROR. HANG
269E	5102	269D	3177	DC	XL2'357B' 101 BR 15,3B TO ADDRESS 103
26A0	7507	269F	3178	DC	XL2'5102' 102 B05,0 ERROR. HANG
26A2	2DA5	26A1	3179	DC	XL2'7507' 103 IC HDB 05=07
26A4	3CFD	26A3	3180	DC	XL2'2DA5' 104 LR HDB 05 TO 3D. HDB 3D NOW=07
26A6	5106	26A5	3181	DC	XL2'3CFD' 105 BR 3C,3D TO ADDRESS 0107.
26A8	5107	26A7	3182	DC	XL2'5106' 106 B05,0 ERROR. HANG
26AA	5108	26A9	3183	DC	XL2'5107' 107 B05,0 EXPECTED RESULTS.
26AC	5109	26AB	3184	DC	XL2'5108' 108 B05,0 ERROR. HANG
26AE	510A	26AD	3185	DC	XL2'5109' 109 B05,0 ERROR. HANG
26B0	510B	26AF	3186	DC	XL2'510A' 10A B05,0 ERROR. HANG
26B2	510C	26B0	3187	DC	XL2'510B' 10B B05,0 ERROR. HANG
26B4	3995	26B3	3188	DC	XL2'510C' 10C B05,0 ERROR. HANG
26B6	510E	26B5	3189	DC	XL2'3995' 10D BR 29,15 TO ADDRESS 101
		26B7	3190	R33MC2 DC	XL2'510E' 10E B05,0 ERROR. HANG

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		3192			*****
		3193	*		ROUTINE 20 - MEAR/CURAR HARDWARE TESTS
		3194			*****
		3195	*		
		3196	*		THIS ROUTINE TESTS THE MBAR AND CURAR HARDWARE AND THE SSN
		3197	*		WHICH MOVES THE VALUE OF MBAR TO CURAR. THE VALUES USED ARE
		3198	*		7FF, 000, 555 AND 2AA. THE MICROPROGRAM IS ENTERED 4 TIMES.
		3199	*		B05,1 WHICH TESTS FOR MBAR = CURAR IS ALSO TESTED.
		3200	*		
		3201			*****
		3202			
268B	20	268B	3203	RT20 DC	XL1'20' ROUTINE NUMBER
2689	00	2689	3204	DC	XL1'00' NO MANUAL INTERVENTION
268A	2772	268B	3205	DC	AL2(RT21) ADDRESS OF NEXT ROUTINE
		3206			
		268C	3207		USING R16K01,XR1
268C	C2 01 2608	3208	LA	R16K01,XR1	INITIALIZE XR1 FOR INDEXING
		3209			
26C0	CO 87 021A	3210	B	PRINT	PRINT ROUTINE HEADING
26C4	01	26C4	3211	DC	XL1'01'
26C5	18	26C5	3212	DC	IL1'24'
26C6	2749	26C7	3213	DC	AL2(RT160P)
		3214			
26C8	CO 87 5918	3215	R16K01 B	LOADCS	GO LOAD MICROPROGRAM
26CC	83	26CC	3216	DC	XL1'83'
		3217	*		
26CD	274E	26CE	3218	DC	AL2(R16MCS)
26CF	2771	26D0	3219	DC	AL2(R16MCE)
		3220			
26D1	0C 01 26F8 56E3	3221	MVC	R16EX2(2),X07FF	PUT FIRST CONSTANT IN PROGRAM
26D7	71 48 30	3222	R16RPT LIO	R16EX2(,XR1),HDB0	LOAD CONSTANT IN HDB 10-11
26DA	3C 0C 5564	3223	MVI	LPCNT,4'0C'	INCREASE DELAY
26DE	CO 87 54FE	3224	B	DOMICR	GO EXECUTE MICROPROGRAM
26E2	58	26E2	3225	DC	XL1'58'
26E3	5010	26E4	3226	DC	XL2'5010'
		3227			
26E5	3D 4D 5FE6	3228	SNS	STATAC,HDB5	SENSE CURAR CONTENTS
26E9	1D 01 5FE6 30	3229	CLC	STATAC,R16EX2(2,XR1)	COMPARE FOR EXPECTED VALUE
26EE	F2 81 08	3230	JE	R16B02	CONTINUE IF OKAY
26F1	CO 87 5DA5	3231	R16RPN B	STATUS	ERROR
26F5	20	26F5	3232	DC	XL1'20'
26F6	59	26F6	3233	DC	XL1'59'
26F7	0000	26F8	3234	R16EX2 DC	XL2'0'
		3235			
26F9	0D 01 26F8 56E3	3236	R16B02 CLC	R16EX2(2),X07FF	CHECK FOR USING DATA = 7FF
26FF	F2 81 16	3237	JE	R16B03	IF SO INSERT NEXT DATA
2702	4D 01 30 0D62	3238	CLC	R16EX2(2,XR1),ZERO	CHECK FOR USING DATA = 000
2707	F2 81 16	3239	JE	R16B04	IF SO INSERT NEXT DATA
270A	5D 01 30 85	3240	CLC	R16EX2(2,XR1),X02AA(,XR1)	CHECK FOR USING DATA = 2AA
270E	F2 81 16	3241	JE	R16B05	IF SO INSERT NEXT DATA
2711	5D 01 30 83	3242	CLC	R16EX2(2,XR1),X0555(,XR1)	CHECK FOR USING DATA = 555
2715	F2 81 16	3243	JE	R16B06	IF SO EXIT ROUTINE
		3244			
2718	4C 01 30 0D62	3245	R16B03 MVC	R16EX2(2,XR1),ZERO	SET EXPECTED DATA = 000
271D	D0 87 0F	3246	B	R16RPT(,XR1)	GO REPEAT ROUTINE
2720	5C 01 30 85	3247	R16B04 MVC	R16EX2(2,XR1),X02AA(,XR1)	SET EXPECTED DATA = 2AA
2724	D0 87 0F	3248	B	R16RPT(,XR1)	GO REPEAT ROUTINE
2727	5C 01 30 83	3249	R16B05 MVC	R16EX2(2,XR1),X0555(,XR1)	SET EXPECTED DATA = 555
272B	D0 87 0F	3250	B	R16RPT(,XR1)	GO REPEAT ROUTINE
		3251			
272E	CO 87 0216	3252	R16B06 B	LINK	GO TO NEXT ROUTINE
		3253			
2732	D9D6E4E340F2F C40	2749	3254	RT160P DC	CL24'ROUT 20 MBAR/CURAR TESTS'
273A	D4C2C1D961C3E 4D9	3254			
2742	C1D940E3C5E2E 3E2	3254			
		3255			
274A	0555	274B	3256	X0555 DC	XL2'0555'
274C	02AA	274D	3257	X02AA DC	XL2'02AA'



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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
28C3	D9C5C1C440	28C7 3381	R17M6 DC	CL5*READ *
		3382		
		3383		
		3384		* START OF MICROPROGRAM LISTING *
		3385		
		28C8 3386	R17MCS EQU *	
28C8	2310	28C9 3387	DC	XL2*2310* 00 LR. SET HDB 3 = DATA FLAG
28CA	2411	28CB 3388	DC	XL2*2411* 01 LR. SET HDB 4 = DATA TO BE WRITTEN
28CC	7200	28CD 3389	DC	XL2*7200* 02 IC. SET HDB 2 = WRITE FLAG
28CE	7001	28CF 3390	DC	XL2*7001* 03 IC. RESET MBAR HI = 01
28D0	7100	28D1 3391	DC	XL2*7100* 04 IC. RESET MBAR LO
28D2	0584	28D3 3392	DC	XL2*0584* 05 LE. WRITE FROM HDB 4 TO MSG. BUFFER
28D4	0545	28D5 3393	DC	XL2*0545* 06 LE. MOVE DATA TO HDB 05 FROM HDB.
28D6	8405	28D7 3394	DC	XL2*8405* 07 CIR. CHECK DATA
28D8	9C0A	28D9 3395	DC	XL2*9C0A* 08 BOC.3 BRANCH IF DATA OKAY
28DA	5009	28DB 3396	DC	XL2*5009* 09 ERROR. HANG
28DC	1110	28DD 3397	DC	XL2*1110* 0A INC. INCREMENT MBAR LO
28DE	9C0F	28DF 3398	DC	XL2*9C0F* 0B BOC.3 IF ZERO, INCREMENT HI
28E0	F380	28E1 3399	DC	XL2*F380* 0C TBN. TEST FOR DATA TC BE INCREMENTED
28E2	9C13	28E3 3400	DC	XL2*9C13* 0D BOC.3 BRANCH IF SO
28E4	5005	28E5 3401	DC	XL2*5005* 0E BOS.0 LOOP
28E6	1010	28E7 3402	DC	XL2*1010* 0F INC. INCREMENT MBAR HI
28E8	F018	28E9 3403	DC	XL2*F018* 10 TBN. TEST FOR END
28EA	900C	28EB 3404	DC	XL2*900C* 11 BOC.0 IF NOT RETURN TO LOOP
28EC	5018	28ED 3405	DC	XL2*5018* 12 BOS.0 BRANCH TO READ LOOP
28EE	1410	28EF 3406	DC	XL2*1410* 13 INC. INC HDB 4 TO NEXT DATA TO BE USED
28F0	9C16	28F1 3407	DC	XL2*9C16* 14 BOS.3 BRANCH IF ZERO
28F2	5005	28F3 3408	DC	XL2*5005* 15 BOS.0 RETURN TO WRITE LOOP
28F4	1410	28F5 3409	DC	XL2*1410* 16 INC. INC HDB 4 AGAIN
28F6	5005	28F7 3410	DC	XL2*5005* 17 BOS.0 RETURN TO WRITE LOOP
		3411		
		3412	*	READ LOOP
		3413		
28F8	72FF	28F9 3414	DC	XL2*72FF* 18 IC. SET HDB 2 = READ FLAG
28FA	7001	28FB 3415	DC	XL2*7001* 19 IC. RESET MBAR HI = 01
28FC	7100	28FD 3416	DC	XL2*7100* 1A IC. RESET MBAR LO
28FE	2411	28FF 3417	DC	XL2*2411* 1B LR. SET HDB 4 TO DATA EXPECTED
2900	7599	2901 3418	DC	XL2*7599* 1C IC. PUT 99 IN HDB 5
2902	0545	2903 3419	DC	XL2*0545* 1D LE. READ MSG. BUF. TO HDB 5
2904	8405	2905 3420	DC	XL2*8405* 1E CIR. CHECK FOR EXPECTED RESULT
2906	9C21	2907 3421	DC	XL2*9C21* 1F BRANCH IF OKAY
2908	5020	2909 3422	DC	XL2*5020* 20 ERROR. HANG
290A	1110	290B 3423	DC	XL2*1110* 21 INC. INCREMENT MBAR LO
290C	9C2B	290D 3424	DC	XL2*9C2B* 22 BOC.3 TO ADDR 2B IF ZERO
290E	F380	290F 3425	DC	XL2*F380* 23 TBN.3,00 TEST FOR DATA INCREMENT
2910	9C26	2911 3426	DC	XL2*9C26* 24 BOC.3 TO ADDR 26 IF SO
2912	501C	2913 3427	DC	XL2*501C* 25 BOS.0 TO ADDR 1C TO READ LOOP
2914	1410	2915 3428	DC	XL2*1410* 26 INC HDB 4 TO NEXT DATA TO BE USED
2916	9C29	2917 3429	DC	XL2*9C29* 27 BOC.3 BR TO ADDR 29 IF ZERO
2918	501C	2919 3430	DC	XL2*501C* 28 BOS.0 TO ADDR 1C TO READ LOOP
291A	1410	291B 3431	DC	XL2*1410* 29 INC HDB 4 AGAIN
291C	501C	291D 3432	DC	XL2*501C* 2A BOS.0 TO ADDR 1C TO READ LOOP
		3433	*	READ LOOP END TESTING
291E	1010	291F 3434	DC	XL2*1010* 2B INC MBAR HI
2920	E008	2921 3435	DC	XL2*E008* 2C CI 0,X*08 TEST FOR 1ST ADDR OF FET 2
2922	9C35	2923 3436	DC	XL2*9C35* 2D BOC.3 BR TO ADDR 35 IF SO
2924	E00E	2925 3437	DC	XL2*E00E* 2E CI 0,X*0E TEST FOR 4TH QUAD OF FET 2
2926	9C38	2927 3438	DC	XL2*9C38* 2F BOC.3 BR TO ADDR 38 IF SO
2928	E010	2929 3439	DC	XL2*E010* 30 CI 0,X*10 TEST FOR 1ST ADDR OF FET 3
292A	9C3C	292B 3440	DC	XL2*9C3C* 31 BOC.3 BR TO ADDR 3C IF SO
292C	E018	292D 3441	DC	XL2*E018* 32 CI 0,X*18 MAXIMUM ADDRESS?
292E	9C3E	292F 3442	DC	XL2*9C3E* 33 BOC.3 TO END AT ADDR 03E.
2930	5023	2931 3443	DC	XL2*5023* 34 BOS.0 BR TO ADDR 23 TO DATA INC
2932	F301	2933 3444	DC	XL2*F301* 35 TBN 3,X*01 TEST FOR FET 2 INST FLAG
2934	9C23	2935 3445	DC	XL2*9C23* 36 BOC.3 TO ADR 23, DATA INC. IF SO
2936	503E	2937 3446	DC	XL2*503E* 37 BOS.0 OTHERWISE BR TO 3E,END.
2938	F302	2939 3447	DC	XL2*F302* 38 TBN 3,X*02 TEST FOR FET 3 INST FLAG
293A	9C23	293B 3448	DC	XL2*9C23* 39 BOC.3 TO ADR 23, DATA INC. IF SO

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
293C	7415	293D 3449	DC	XL2*7415* 3A IC 4,X*15 CHANGE EXP. DATA TO 15
293E	5023	293F 3450	DC	XL2*5023* 3B BOS.0 TC ADR 23, DATA INC
2940	F302	2941 3451	DC	XL2*F302* 3C TBN 3,X*02 TEST FOR FET 3 INST FLAG
2942	9C23	2943 3452	DC	XL2*9C23* 3D BOC.3 TO ADR 23, DATA INC. IF SO
2944	503E	2945 3453	R17NCE DC	XL2*503E* 3E BOS.0 HANG. EXPECTED RESULTS
		3454		
		3455		*****
		3456		* ROUTINE 22 MBAR INTERACTION *
		3457		*****
		3458		* MACRO-1. LIO HDB 0C/C1=0000 *
		3459		*
		3460		* MICRO-1. MBAR TO CURAR STROBE. *
		3461		INSURE MBAR=CURAR. *
		3462		WRITE HEX 'FF' TO ALL HDB'S THAT ARE 'ONE-ADDR-BIT' AWAY. *
		3463		INSURE MBAR STILL EQUAL CURAR. *
		3464		*
		3465		* MACRO-2 LIO TO ALL HDB'S THAT ARE 'ONE-ADDR-BIT' AWAY WITH *
		3466		DATA OF FFFF. *
		3467		* MICRO-2 INSURE MBAR STILL EQUAL CURAR. *
		3468		*
		3469		*****
2946	22	2946 3470	RT22 DC	XL1*22* ROUTINE NO.
2947	00	2947 3471	DC	XL1*00*
2948	2A49	2949 3472	DC	AL2(RT23)
		3473		
294A	C0 87 021A	3474	B	PRINT PRINT ROUTINE HEADING.
294E	01	294E 3475	DC	XL1*01*
294F	18	294F 3476	DC	IL1*24*
2950	296D	2951 3477	DC	AL2(R42HDR)
2952	C0 87 296E	3478	B	DORT42
2956	D9D6E4E34CF2F 140	296D 3479	R42HDR DC	CL24*ROUT 22 MBAR INTERACTION*
295E	D4C2C1D940C9D5E3	3479		
2966	C5D9C1C3E3C9D 05	3479		
296E	C0 87 5918	3480	DORT42 B	LOADCS LOAD MICROCODE 1.
2972	8F	2972 3481	DC	XL1*8F* FILL WITH BOS-TO-ADDR
2973	29FB	2974 3482	DC	AL2(R42NCS)
2975	2A42	2976 3483	DC	AL2(R42NCE)
2977	F3 58 80	3484	SIO	X*80*.SIOI DISABLE RESET
297A	31 48 0D62	3485	LIO	ZERO.HDB0 MBAR & HDB 00/01=ZERO
297E	C0 87 54FE	3486	B	DUMICR GO DO MICROCODE 1.
2982	70	2982 3487	DC	XL1*70* ERROR HALT 70.
2983	5023	2984 3488	DC	XL2*5023* EXPECTED RESULTS
		3489		
		3490	*	START MACRO-2.
2985	F3 58 80	3491	SIO	X*80*.SIOI DISABLE RESET
2988	31 49 0D59	3492	LIO	XFFFF.HDB1 HDB 02/03=FFFF
298C	31 4A 0D59	3493	LIO	XFFFF.HDB2 HDB 04/05=FFFF
2990	31 4B 0D59	3494	LIO	XFFFF.HDB3 HDB 06/07=FFFF
2994	31 4C 0D59	3495	LIO	XFFFF.HDB4 HDB 08/09=FFFF
2998	31 4D 0D59	3496	LIO	XFFFF.HDB5 HDB 0A/0B=FFFF
299C	31 4E 0D59	3497	LIO	XFFFF.HDB6 HDB 0C/0D=FFFF
29A0	31 4F 0D59	3498	LIO	XFFFF.HDB7 HDB 0E/0F=FFFF
29A4	F3 58 C0	3499	SIO	X*80*.SIOI ENABLE ATTACHMENT
29A7	31 48 0D59	3500	LIO	XFFFF.HDB0 HDB 10/11=FFFF
29AB	31 49 0D59	3501	LIO	XFFFF.HDB1 HDB 12/13=FFFF
29AF	31 4A 0D59	3502	LIO	XFFFF.HDB2 HDB 14/15=FFFF
29B3	31 4B 0D59	3503	LIO	XFFFF.HDB3 HDB 16/17=FFFF
29B7	31 4C 0D59	3504	LIO	XFFFF.HDB4 HDB 18/19=FFFF
29BB	31 4D 0D59	3505	LIO	XFFFF.HDB5 HDB 1A/1B=FFFF
29BF	31 4E 0D59	3506	LIO	XFFFF.HDB6 HDB 1C/1D=FFFF
29C3	31 4F 0D59	3507	LIO	XFFFF.HDB7 HDB 1E/1F=FFFF
29C7	31 88 0D59	3508	LIO	XFFFF.X*88* LOAD
29CB	31 89 0D59	3509	LIO	XFFFF.X*89* HI
29CF	31 8A 0D59	3510	LIO	XFFFF.X*8A* HDB'S
29D3	31 8B 0D59	3511	LIO	XFFFF.X*8B* TO
29D7	31 8C 0D59	3512	LIO	XFFFF.X*8C* FFFF
29DB	31 8D 0D59	3513	LIO	XFFFF.X*8D*
29DF	31 8E 0D59	3514	LIO	XFFFF.X*8E*

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
29E3	31 8F 0D59	3515	L10	XFFFF.X'8F'
29E7	C0 87 5918	3516	R42M12 B	LOADCS
29E8	8F	29EB	3517	DC XL1'8F'
29EC	2A43	29ED	3518	DC AL2(R42MC1)
29EE	2A48	29EF	3519	DC AL2(R42MC2)
29F0	C0 87 54FE	3520	B	DOMICR
29F4	71	29F4	3521	DC XL1'71'
29F5	5002	29F6	3522	DC XL2'5002'
29F7	C0 87 0216	3523	B	L1NK
		3524		
		3525		* START OF MICROCODE 1.
		3526		-----*
		3527		* START OF MICROPROGRAM LISTING *
		3528		-----*
29FB	1704	29FB	3529	R42MCS EQU *
29FC	3530	29FC	3530	DC XL2'1704' 000 SSN A MBAR TO CURAR STROBE
29FD	54 03	29FE	3531	DC XL2'5403' 001 BOS.1 TO ADDR 003 IF MBAR=CURAR
29FF	5002	2A00	3532	DC XL2'5002' 002 BOS.0 ERROR, HANG
2A01	72FF	2A02	3533	DC XL2'72FF' 003 IC 2.X'FF'
2A03	73FF	2A04	3534	DC XL2'73FF' 004 IC 3.X'FF'
2A05	74FF	2A06	3535	DC XL2'74FF' 005 IC 4.X'FF'
2A07	75FF	2A08	3536	DC XL2'75FF' 006 IC 5.X'FF'
2A09	78FF	2A0A	3537	DC XL2'78FF' 007 IC 6.X'FF'
2A0B	79FF	2A0C	3538	DC XL2'79FF' 008 IC 9.X'FF'
2A0D	2029	2A0E	3539	DC XL2'2029' 009 LR 10.09
2A0F	2129	2A10	3540	DC XL2'2129' 00A LR 11.09
2A11	2229	2A12	3541	DC XL2'2229' 00B LR 12.09
2A13	2329	2A14	3542	DC XL2'2329' 00C LR 13.09
2A15	2429	2A16	3543	DC XL2'2429' 00D LR 14.09
2A17	2529	2A18	3544	DC XL2'2529' 00E LR 15.09
2A19	2829	2A1A	3545	DC XL2'2829' 00F LR 18.09
2A1B	2929	2A1C	3546	DC XL2'2929' 010 LR 19.09
2A1D	2089	2A1E	3547	DC XL2'2089' 011 LR 20.09
2A1F	2189	2A20	3548	DC XL2'2189' 012 LR 21.09
2A21	2289	2A22	3549	DC XL2'2289' 013 LR 22.09
2A23	2389	2A24	3550	DC XL2'2389' 014 LR 23.09
2A25	2489	2A26	3551	DC XL2'2489' 015 LR 24.09
2A27	2589	2A28	3552	DC XL2'2589' 016 LR 25.09
2A29	2889	2A2A	3553	DC XL2'2889' 017 LR 28.09
2A2B	2989	2A2C	3554	DC XL2'2989' 018 LR 29.09
2A2D	20A9	2A2E	3555	DC XL2'20A9' 019 LR 30.09
2A2F	21A9	2A30	3556	DC XL2'21A9' 01A LR 31.09
2A31	22A9	2A32	3557	DC XL2'22A9' 01B LR 32.09
2A33	23A9	2A34	3558	DC XL2'23A9' 01C LR 33.09
2A35	24A9	2A36	3559	DC XL2'24A9' 01D LR 34.09
2A37	25A9	2A38	3560	DC XL2'25A9' 01E LR 35.09
2A39	28A9	2A3A	3561	DC XL2'28A9' 01F LR 38.09
2A3B	29A9	2A3C	3562	DC XL2'29A9' 020 LR 39.09
2A3D	5423	2A3E	3563	DC XL2'5423' 021 BOS.1 TO ADDR 023 IF MBAR=CURAR
2A3F	5022	2A40	3564	DC XL2'5022' 022 BOS.0 ERROR, HANG
2A41	5023	2A42	3565	R42MCE DC XL2'5023' 023 BOS.0 EXPECTED RESULTS
		3566		
		3567		-----*
		3568		* START OF MICROPROGRAM LISTING *
		3569		-----*
2A43	54 02	2A43	3570	R42MC1 EQU *
2A44	5001	2A44	3571	DC XL2'5402' 000 BOS.1 TO ADDR 002 IF MBAR=CURAR
2A46	5002	2A46	3572	DC XL2'5001' 001 BOS.0 ERROR, HANG
2A47	5002	2A48	3573	R42MC2 DC XL2'5002' 002 BOS.0 EXPECTED RESULTS
		3574		
3575				*****
3576				* ROUTINE 23 - ATTACHMENT CHECK TESTS *
3577				*****
3578				*
3579				* THIS ROUTINE TESTS THAT ALL DIFFERENT TYPES OF ATTACHMENT
3580				* CHECKS CAN BE DETECTED. IT DOES THIS BY USING DIAG. LATCH 2
3581				* WHICH CAN BLOCK THE PARITY BIT.
3582				*

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		3583		*****
		3584		
2A49	23	2A49	3585	RT23 DC XL1'23'
2A4A	00	2A4A	3586	DC XL1'0'
2A4B	2B80	2A4C	3587	DC AL2(RT24)
				3588
2A4D	C0 87 021A			3589 B PRINT
2A51	01	2A51	3590	DC XL1'01'
2A52	18	2A52	3591	DC IL1'24'
2A53	2B7F	2A54	3592	DC AL2(RT18CP)
				3593
2A55	C0 87 5918			3594 B LOADCS
2A59	01	2A59	3595	DC XL1'01'
2A5A	F3 58 84			3596 SIO X'84'.SIO1
2A5D	31 59 5D8D			3597 L10 X2205.OPDEC
2A61	F3 58 80			3598 SIO X'80'.SIO1
2A64	F3 58 E0			3599 SIO X'E0'.SIO1
2A67	C0 87 61E6			3600 B TSTCHK
2A68	80	2A68	3601	DC XL1'80'
2A6C	5D	2A6C	3602	DC XL1'5D'
2A6D	C0 87 5D38			3603 B L00P
				3604
2A71	F3 58 84			3605 SIO X'84'.SIO1
2A74	31 59 5D6D			3606 L10 X1415.OPDEC
2A78	F3 58 80			3607 SIO X'80'.SIO1
2A7B	F3 58 E0			3608 SIO X'E0'.SIO1
2A7E	C0 87 61E6			3609 B TSTCHK
2A82	80	2A82	3610	DC XL1'80'
2A83	58	2A83	3611	DC XL1'58'
2A84	C0 87 5D38			3612 B L00P
				3613
2A88	F3 58 84			3614 SIO X'84'.SIO1
2A8B	31 4A 0D56			3615 L10 XAA55.HDB2
				3616
2A8F	F3 58 80			3617 SIO X'80'.SIO1
2A92	30 4A 5FE6			3618 SNS STATA.C.HDB2
2A96	C0 87 61E6			3619 B TSTCHK
2A9A	88	2A9A	3620	DC XL1'88'
2A9B	5A	2A9B	3621	DC XL1'5A'
				3622
2A9C	F3 58 C0			3623 SIO X'C0'.SIO1
2A9F	31 58 2B5F			3624 L10 X2204.CTSTOR
2AA3	F3 58 80			3625 SIO X'80'.SIO1
2AA6	C0 87 54FE			3626 B DOMICR
2AAA	5E	2AAA	3627	DC XL1'5E'
2AAB	5001	2AAC	3628	DC XL2'5001'
2AAD	C0 87 61E6			3629 B TSTCHK
2AB1	88	2AB1	3630	DC XL1'88'
2AB2	5F	2AB2	3631	DC XL1'5F'
				3632
2AB3	F3 58 C0			3633 SIO X'C0'.SIO1
2AB6	31 58 2B61			3634 L10 X2503.CTSTOR
2ABA	F3 58 80			3635 SIO X'80'.SIO1
2ABD	C0 87 54FE			3636 B DOMICR
2AC1	60	2AC1	3637	DC XL1'60'
2AC2	5001	2AC3	3638	DC XL2'5001'
2AC4	C0 87 61E6			3639 B TSTCHK
2AC8	88	2AC8	3640	DC XL1'88'
2AC9	61	2AC9	3641	DC XL1'61'
2ACA	31 49 0D56			3642 L10 XAA55.HDB1
2ACE	31 4A 0D56			3643 L10 XAA55.HDB2
				3644
2AD2	F3 58 84			3645 SIO X'84'.SIO1
2AD5	31 48 3198			3646 L10 X0155.HDB0
2AD9	F3 58 E0			3647 SIO X'E0'.SIO1
2ADC	C0 87 61E6			3648 B TSTCHK
2AE0	81	2AE0	3649	DC XL1'81'
2AE1	62	2AE1	3650	DC XL1'62'
				3651
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8912 DISPLAY ADAPTER TEST

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			3651		
2AE2	F3 58 84		3652	SIO	X'84'.SIOI .DISABLE & SET DIAG 2
2AE5	31 48 5A08		3653	LIO	MUN.HDBO .PUT BAD PARITY IN MBAR HI
2AE9	F3 58 E0		3654	SIO	X'E0'.SIOI .ENABLE M.C. & RESET DIAG 2
2AEC	C0 87 61E6		3655	B	TSTCHK .CONTROL STORE ADDR. CHECK
2AF0	81	2AF0	3656	DC	XL1'81' SHOULD BE PENDING
2AF1	68	2AF1	3657	DC	XL1'68' .ERROR HALT -68-
2AF2	31 48 0D58		3658	LIO	X0202.HDBO .PUT GOOD PARITY IN MBAR
			3659		
2AF6	F3 58 E4		3660	SIO	X'E4'.SIOI .ENABLE M.C. WITH DIAG 2 ON
2AF9	C0 87 61E6		3661	B	TSTCHK .CONTROL STORE ADDR CHECK
2AFD	81	2AFD	3662	DC	XL1'81' SHOULD BE PENDING
2AFE	68	2AFE	3663	DC	XL1'68' .ERROR HALT -68-
			3664		
2AFF	C0 87 5918		3665	B	LOADCS .GO PUT BOS.0 ADDR IN CONT. STG.
2B03	01	2B03	3666	DC	XL1'01'
			3667		
2B04	F3 58 C0		3668	SIO	X'C0'.SIOI .ENABLE ATTACHMENT
2B07	30 58 5FE6		3669	SNS	STATAC.CTSTOR .INCREMENT MIAR
2B08	31 58 2B67		3670	LIO	X0584.CTSTOR .LOAD WORD IN CONT. STORE
2B0F	F3 58 80		3671	SIO	X'80'.SIOI .DISABLE ATTACHMENT
2B12	F3 58 C0		3672	SIO	X'C0'.SIOI .ENABLE ATTACHMENT
2B15	30 58 5FE6		3673	SNS	STATAC.CTSTOR .INCREMENT MIAR
2B19	F3 58 E4		3674	SIO	X'E4'.SIOI .ENABLE M.C. & SET DIAG 2
			3675 *		PROG. WILL LR FROM HDB 4 TO
			3676 *		M.B. WITH BAD PARITY
2E1C	C0 87 61E6		3677	B	TSTCHK .CONT. STORE WRITE DATA CHECK
2B20	02	2B20	3678	DC	XL1'82' SHOULD BE PENDING
2B21	6D	2B21	3679	DC	XL1'6D' .ERROR HALT -6D-
			3680		
2B22	F3 58 C0		3681	SIO	X'C0'.SIOI .ENABLE ATTACHMENT
2B25	30 58 5FE6		3682	SNS	STATAC.CTSTOR .INCREMENT MIAR
2B29	F3 58 E0		3683	SIO	X'E0'.SIOI .ENABLE M.C. RESTORE GOOD DATA
2B2C	F3 58 80		3684	SIO	X'80'.SIOI .DISABLE ATTACHMENT
			3685		
2B2F	F3 58 C4		3686	SIO	X'C4'.SIOI .ENABLE WITH DIAG 2 ON
2B32	31 58 2B63		3687	LIO	XE101.CTSTOR .WRITE BAD PARITY EVEN BYTE
2B36	F3 58 80		3688	SIO	X'80'.SIOI .DISABLE
2B39	F3 58 E0		3689	SIO	X'E0'.SIOI .ENABLE M.C.
2B3C	C0 87 61E6		3690	B	TSTCHK .C.S. DATA CHECK SHOULD BE
2B40	84	2B40	3691	DC	XL1'84' PENDING
2B41	74	2B41	3692	DC	XL1'74' .ERROR HALT -74-
			3693		
2B42	F3 58 C4		3694	SIO	X'C4'.SIOI .ENABLE WITH DIAG 2 ON
2B45	31 58 2B65		3695	LIO	XE003.CTSTOR .WRITE BAD PARITY ODD BYTE
2B49	F3 58 80		3696	SIO	X'80'.SIOI .DISABLE
2B4C	F3 58 E0		3697	SIO	X'E0'.SIOI .ENABLE M.C.
2B4F	C0 87 61E6		3698	B	TSTCHK .C. S. DATA AND HDB/EXT CHECKS
2B53	8C	2B53	3699	DC	XL1'8C' SHOULD BE PENDING
2B54	7B	2B54	3700	DC	XL1'7B' .ERROR HALT -7B-
2B55	C0 87 5918		3701	B	LOADCS .GO PUT GOOD PARITY IN C.S.
2B59	01	2B59	3702	DC	XL1'01'
2B5A	C0 87 0216		3703	B	LINK .GO TO NEXT ROUTINE
			3704		
2B5E	2204	2B5E	3705	DC	XL2'2204'
2B60	2503	2B60	3706	DC	XL2'2503'
2B62	E101	2B62	3707	DC	XL2'E101'
2B64	E003	2B64	3708	DC	XL2'E003'
2B65	0584	2B65	3709	DC	XL2'0584'
2B68	D9D6E4E340F2F 340	2B7F	3710	DC	RT18DP CL24*ROUT 23 ATTACHMENT CHECK*
2B70	C1E3E3C1C3C8D4C5		3710		
2B78	D5E340C3C8C5C3D2		3710		
			3711		*****
			3712 *		ROUTINE 24 - CONTROL STORE SCAN *
			3713		*****
			3714 *		
			3715 *		THIS ROUTINE WILL EXERCISE ALL OF CONTROL STORAGE INCLUDING *
			3716 *		THAT PART WHICH IS USED AS THE MESSAGE BUFFER. *

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			3717 *		IT DOES THIS BY PUTTING INCREMENTING DATA IN EACH BYTE. 256 *
			3718 *		PASSES ARE MADE SO THAT EACH BYTE WILL HAVE ALL COMBINATIONS *
			3719 *		OF DATA IN IT. THE DATA IS WRITTEN AND READ AND CHECKED USING *
			3720 *		MBAR AND MICROPROGRAM TO ADDRESS EACH BYTE. *
			3721 *		THE ROUTINE IS DONE IN TWO PHASES. IN THE FIRST PHASE, THE *
			3722 *		MICROCODE IS LOADED IN THE 3RD 256 WORDS AND THE FIRST 1024 *
			3723 *		BYTES ARE EXERCISED. THEN THE MICROCODE IS LOADED IN THE *
			3724 *		FIRST 256 WORDS AND THE 2ND 1024 BYTES ARE EXERCISED. *
			3725 *		IN A MACHINE WITH 2 STGS. THERE ARE 4 PHASES DONE TO TEST *
			3726 *		BOTH STGS. IN THE FIRST TWO PHASES, THE MICROCODE IS IN THE *
			3727 *		2ND STG AND THE 1ST STG IS TESTED. ERRORS IN THE 1ST STG ARE *
			3728 *		DENOTED BY HALT -8B-. IN THE NEXT TWO PHASES, THE MICROCODE *
			3729 *		IS IN THE 1ST STG AND THE 2ND STG IS TESTED. ERRORS IN THE *
			3730 *		2ND STG ARE DENOTED BY HALT -8C-. *
			3731 *		
			3732		*****
			3733		
2B80	24	2B80	3734	DC	XL1'24' ROUTINE NUMBER
2B81	00	2B81	3735	DC	XL1'00' NO MANUAL INTERVENTION
2B82	20C7	2B82	3736	DC	AL2(RT25) ADDRESS OF NEXT ROUTINE
			3737		
2B84	C0 87 021A		3738	B	PRINT .PRINT ROUTINE MESSAGE
2B88	01	2B88	3739	DC	XL1'01'
2B89	31	2B89	3740	DC	IL1'49'
2B8A	2DBA	2B8A	3741	DC	AL2(RT2DCP)
			3742		
2B8C	38 08 020B		3743	TBN	SBYTE3,SSW1C .TEST SSW 1C ON
2B90	C0 10 0216		3744	BT	LINK .IF SO, SKIP THIS ROUTINE
2B94	3B 01 020A		3745	SBF	SBYTE2,SSW17 .RESET SENSE SWITCH 17
			3746 *		
			3747 *		BEGIN TESTING LO HALF OF FIRST STORAGE WITH
			3748 *		THE MICROPROGRAM RUNNING IN THE HI HALF
2B98	C0 87 5918		3749	B	LOADCS .GO LOAD 1ST 256 WORDS WITH A
2B9C	91	2B9C	3750	DC	XL1'91' WITH A BRANCH TO 3RD 256
2B9D	2D04	2B9D	3751	DC	AL2(R2DMCS)
2B9F	2D05	2B9F	3752	DC	AL2(R2DMCE)
2BA1	C0 87 5918		3753	B	LOADCS .GO PUT BOS TO ADDR. IN THE
2BA5	32	2BA5	3754	DC	XL1'32' 2ND 256 WORDS
2BA6	C0 87 5918		3755	B	LOADCS .GO PUT PROGRAM IN 3RD 256 WDS.
2BAA	A4	2BAA	3756	DC	XL1'A4'
2BAB	2D06	2BAB	3757	DC	AL2(R2DMC1)
2BAD	2D43	2BAD	3758	DC	AL2(R2DMC2)
			3759		
2BAF	3A 01 554D		3760	SBN	EMBP,X'01' .SET ERROR HALT BYPASS ON
2BB3	3C 1A 5563		3761	MVI	LPCNT-1,X'1A' .EXTEND LOOP COUNT
2BB7	F3 58 C0		3762	SIO	X'C0'.SIOI .ENABLE ATTACHMENT
2BBA	31 4A 2D8C		3763	LIO	X0000.HDB2 .PROVIDE START ADDR
2BBE	31 4B 56F4		3764	LIO	X0400.HDB3 .PROVIDE END ADDR
2BC2	C0 87 54FE		3765	B	DOMICR .GO DO MICROPROGRAM
2BC6	8B	2BC6	3766	DC	XL1'8B' .ERROR HALT -8B- OR -8C-
2BC7	521E	2BC7	3767	DC	XL2'521E' .EXPECTED RESULT
			3768		
2BC9	0D 01 5FE6	2BC8	3769	CLC	STATAC(2),R2DEX1 .TEST FOR ERROR
2BCF	C0 01 278A		3770	BNE	R17P0 .PRINT OUT IF ERROR
			3771		
			3772 *		
			3773 *		BEGIN TESTING HI HALF OF FIRST STORAGE WITH
			3774 *		THE MICROPROGRAM RUNNING IN THE LO HALF.
2B03	C0 87 5918		3775	B	LOADCS .LOAD 2ND MICROPROGRAM
2BD7	83	2BD7	3776	DC	XL1'83'
2BD8	2D44	2BD8	3777	DC	AL2(R2DMC3)
2BDA	2D81	2BDB	3778	DC	AL2(R2DMC4)
			3779		
2BDC	3A 01 554D		3780	SBN	EMBP,X'01' .SET ERROR HALT BYPASS ON
2BE0	3C 1A 5563		3781	MVI	LPCNT-1,X'1A' .EXTEND LOOP COUNT
2BE4	F3 58 C0		3782	SIO	X'C0'.SIOI .ENABLE ATTACHMENT
2BE7	31 4A 56F4		3783	LIO	X0400.HDB2 .PROVIDE START ADDR
2BE8	31 4B 2D8E		3784	LIO	X0800.HDB3 .PROVIDE END ADDR

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
2BF3	C0 87 54FE	3785	B	DOMICR	.GO DO 2ND MICROPROGRAM
2BF4	8B	2BF3 3786	RT19M7	DC	XL1*8B*
2BF5	501E	2BF5 3787	R2DEX2	DC	XL2*501E*
2BF6	0D 01 5FE6 2BF5	3788	CLC	STAC(2),R2DEX2	.EXPECTED RESULT
2BFC	C0 01 27BA	3789	BNE	R17P0	.TEST FOR ERROR
		3790			.PRINT OUT IF ERROR
		3791	*		
		3792	*		BEGIN TESTING LOW HALF OF 2ND FET WITH
		3793	*		MICROPROGRAM RUNNING IN HIGH HALF.
2C00	C0 87 5918	3794	B	LOADCS	GO LOAD ADR 000 WITH BAL TO
2C04	9F	2C04 3795	DC	XL1*9F*	0600 AND FILL WITH
2C05	2D82	2C06 3796	DC	AL2(R2DMC5)	BOS-TO-ADDR THRU 03FF
2C07	2D83	2C08 3797	DC	AL2(R2DMC6)	
2C09	C0 87 5918	3798	B	LOADCS	GO LOAD ADR 400 TO 05FF WITH
2C0D	F3	2C0D 3799	DC	XL1*F3*	BOS-TO-ADDRESS.
2C0E	2D82	2C0F 3800	DC	AL2(R2DMC5)	
2C10	2D83	2C11 3801	DC	AL2(R2DMC6)	
2C12	20	2C12 3802	DC	XL1*20*	
2C13	C0 87 5918	3803	B	LOADCS	GO LOAD ADR 0600 WITH FIRST
2C17	EF	2C17 3804	DC	XL1*EF*	PROGRAM AND FILL REST OF STG
2C18	2D06	2C19 3805	DC	AL2(R2DMC1)	BOS-70-ADDR.
2C1A	2D43	2C1B 3806	DC	AL2(R2DMC2)	
2C1C	20	2C1C 3807	DC	XL1*20*	
2C1D	3A 01 554D	3808	CONTINUE	SBN	EHBP,X*01*
2C21	3C 1A 5563	3809	MVI	LPCNT-1,X*1A*	SET ERROR-HALT-BYPASS ON
2C25	F3 58 C0	3810	SIO	X*CO*,SIOI	EXTEND LOOP COUNT
2C28	31 4A 2D8E	3811	LIO	X0800,HDB2	ENABLE ATTACHMENT
2C2C	31 4B 2DC0	3812	LIO	X0C00,HDB3	PROVIDE START ADDR
2C30	C0 87 54FE	3813	B	DOMICR	PROVIDE END ADDR
2C34	8C	2C34 3814	DC	XL1*8C*	GO DO MICROPROGRAM
2C35	521E	2C36 3815	DC	XL2*521E*	ERROR HALT
		3816			EXPECTED RESULTS
2C37	0D 01 5FE6 2B08	3817	CLC	STAC(2),R2DEX1	TEST FOR ERROR
2C3D	C0 01 27BA	3818	BNE	R17P0	PRINT OUT IF ERROR
		3819	*		
		3820	*		BEGIN TESTING HIGH HALF OF 2ND FET WITH
		3821	*		MICROPROGRAMMING RUNNING IN LOW HALF.
2C41	C0 87 5918	3822	B	LOADCS	GO LOAD ADR 000 WITH BAL TO
2C45	9F	2C45 3823	DC	XL1*9F*	0400 AND
2C46	2D84	2C47 3824	DC	AL2(R2DMC7)	FILL WITH BCS-TO-ADDR
2C48	2D85	2C49 3825	DC	AL2(R2DMC8)	THRU 03FF
2C4A	C0 87 5918	3826	B	LOADCS	GO LOAD 2ND MICROPROGRAM AT
2C4E	EF	2C4E 3827	DC	XL1*EF*	ADDRESS 0400 AND FILL WITH
2C4F	2D44	2C50 3828	DC	AL2(R2DMC3)	BOS-TO-ADDR
2C51	2D81	2C52 3829	DC	AL2(R2DMC4)	
2C53	20	2C53 3830	DC	XL1*20*	
		3831			
2C54	3A 01 554D	3832	SBN	EHBP,X*01*	SET ERROR-HALT-BYPASS ON.
2C58	3C 1A 5563	3833	MVI	LPCNT-1,X*1A*	EXTEND LOOP COUNT.
2C5C	F3 58 C0	3834	SIO	X*CO*,SIOI	ENABLE ATTACHMENT
2C5F	31 4A 2DC0	3835	LIO	X0C00,HDB2	PROVIDE START ADDR
2C63	31 4B 2DC2	3836	LIO	X1000,HDB3	PROVIDE END ADDR
2C67	C0 87 54FE	3837	B	DOMICR	GO DO MICROPROGRAM
2C6B	8C	2C6B 3838	DC	XL1*8C*	ERROR HALT
2C6C	501E	2C6D 3839	DC	XL2*501E*	EXPECTED RESULTS
		3840			
2C6E	0D 01 5FE6 2BF5	3841	CLC	STAC(2),R2DEX2	TEST FOR ERROR
2C74	C0 01 27BA	3842	BNE	R17P0	PRINT OUT IF ERROR
		3843	*		
		3844	*		TEST FOR 3RD FET INSTALLED. IF NCT. END ROUTINE. IF SO,
		3845	*		
		3846	*		BEGIN TESTING OF LOW HALF OF 3RD FET WITH
		3847	*		MICROPROGRAM RUNNING IN HIGH HALF.
2C78	38 02 0A0C	3848	TBN	UDT2,X*02*	TEST FOR 3RD FET INSTALLED
2C7C	C0 90 0216	3849	BF	LINK	OUT IF NOT
2C80	C0 87 5918	3850	B	LOADCS	GO LOAD ADR 000 WITH BAL TO
2C84	9F	2C84 3851	DC	XL1*9F*	0A00
2C85	2D86	2C86 3852	DC	AL2(R2DMC9)	AND FILL WITH BCS-TO-ADDR

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
2C87	2D87	2C88 3853	DC	AL2(R2DMCA)	THRU 03FF
2C89	C0 87 5918	3854	B	LOADCS	FILL 0400 THRU 07FF WITH
2C8D	7F	2C8D 3855	DC	XL1*7F*	BOS-70-ADDR.
2C8E	20	2C8E 3856	DC	XL1*20*	
2C8F	C0 87 5918	3857	B	LOADCS	FILL 0800 THRU 09FF WITH
2C93	73	2C93 3858	DC	XL1*73*	BCS TO ADDR
2C94	40	2C94 3859	DC	XL1*40*	
2C95	C0 87 5918	3860	B	LOADCS	LOAD 1ST MICROPROGRAM AT 0A00
2C99	EC	2C99 3861	DC	XL1*EC*	FILL THE REST OF CS WITH
2C9A	2D06	2C9B 3862	DC	AL2(R2DMC1)	BOS-TO-ADDR
2C9C	2D43	2C9D 3863	DC	AL2(R2DMC2)	
2C9E	40	2C9E 3864	DC	XL1*40*	
		3865			
2C9F	3A 01 554D	3866	SBN	EHBP,X*01*	SET ERROR-HALT-BYPASS ON
2CA3	3C 1A 5563	3867	MVI	LPCNT-1,X*1A*	EXTEND LOOP COUNT
2CA7	F3 58 C0	3868	SIO	X*CO*,SIOI	ENABLE ATTACHMENT
2CAA	31 4A 2DC2	3869	LIO	X1000,HDB2	PROVIDE START ADDR
2CAE	31 4B 2DC4	3870	LIO	X1400,HDB3	PROVIDE END ADDR
2CB2	C0 87 54FE	3871	B	DOMICR	GO DO MICRO
2CB6	8D	2CB6 3872	DC	XL1*8D*	ERROR HALT
2CB7	521E	2CB8 3873	DC	XL2*521E*	EXPECTED RESULTS
		3874			
2CB9	0D 01 5FE6 2B08	3875	CLC	STAC(2),R2DEX1	TEST FOR ERROR
2CBF	C0 01 27BA	3876	BNE	R17P0	PRINT OUT IF ERROR
		3877	*		
		3878	*		BEGIN TESTING HIGH HALF OF 3RD FET WITH
		3879	*		MICROCODE RUNNING IN LOW HALF.
2CC3	C0 87 5918	3880	B	LOADCS	GO LOAD ADR 000 WITH BAL TO
2CC7	9F	2CC7 3881	DC	XL1*9F*	0800 AND
2CC8	2D88	2CC9 3882	DC	AL2(R2DMCB)	FILL WITH BCS-TO-ADDR
2CCA	2D89	2CCB 3883	DC	AL2(R2DMCC)	THRU 03FF
2CCC	C0 87 5918	3884	B	LOADCS	GO FILL 0400-07FF WITH
2CD0	7F	2CD0 3885	DC	XL1*7F*	BOS-TO-ADDR
2CD1	20	2CD1 3886	DC	XL1*20*	
2CD2	C0 87 5918	3887	B	LOADCS	GO LOAD 2ND MICROPROGRAM AT
2CD6	EF	2CD6 3888	DC	XL1*EF*	0800 AND FILL REST OF CS WITH
2CD7	2D44	2CD8 3889	DC	AL2(R2DMC3)	BOS-TO-ADDR
2CD9	2D81	2CDA 3890	DC	AL2(R2DMC4)	
2CDB	40	2CDB 3891	DC	XL1*40*	
		3892			
2CDC	3A 01 554D	3893	SBN	EHBP,X*01*	SET ERROR-HALT-BYPASS ON.
2CE0	3C 1A 5563	3894	MVI	LPCNT-1,X*1A*	EXTEND LOOP COUNT
2CE4	F3 58 C0	3895	SIO	X*CO*,SIOI	ENABLE ATTACHMENT
2CE7	31 4A 2DC4	3896	LIO	X1400,HDB2	PROVIDE START ADDR
2CEB	31 4B 2DC6	3897	LIO	X1800,HDB3	PROVIDE END ADDR
2CEF	C0 87 54FE	3898	B	DOMICR	GO DO MICROPROGRAM
2CF3	8D	2CF3 3899	DC	XL1*8D*	ERROR HALT
2CF4	501E	2CF5 3900	DC	XL2*501E*	EXPECTED RESULTS
		3901			
2CF6	0D 01 5FE6 2BF5	3902	CLC	STAC(2),R2DEX2	TEST FOR ERROR
2CFC	C0 01 27BA	3903	BNE	R17P0	PRINT OUT IF ERROR
2D00	C0 87 0216	3904	B	LINK	EXIT TO NEXT ROUTINE.
		2D04 3905	R2DMCS	EQU	*
		2D05 3906	R2DMCE	DC	XL2*5200*
		3907			BOS.0 TO ADDR. 200
		3908	*		
		3909	*		
		3910	*		
		3911	*		
		3912	*		
		3913	*		START OF MICROPROGRAM LISTING *
		3914	*		
		3915	*		1ST MICRO PROGRAM
		2006 3916	R2DMC1	EQU	*
2D06	7F00	2D07 3917	DC	XL2*7F00*	00 IC. SET MDB OF TO START DATA (00)
2D08	240F	2D09 3918	DC	XL2*240F*	01 LOAD START DATA INTO MDB 04
2D0A	7200	2D0B 3919	DC	XL2*7200*	02 IC. SET MDB 02 TO INDICATE WRITE
2D0C	2014	2D0D 3920	DC	XL2*2014*	03 LR 0,14 START ADDR HI

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
2D0E	2115	2D0F	3921	DC	XL2*2115* 04 LR1,15 START ADDR LO
2D10	0584	2D11	3922	DC	XL2*0584* 05 LE, WRITE M.B. FROM HDB 04
2D12	0545	2D13	3923	DC	XL2*0545* 06 LE, READ M.B. DATA TO HDB 05
2D14	8405	2D15	3924	DC	XL2*8405* 07 CIR, COMPARE DATA
2D16	92E1	2D17	3925	DC	XL2*92E1* 08 BOC,0 BRANCH IF NO COMPARE
2D18	1410	2D19	3926	DC	XL2*1410* 09 INC, INCREMENT DATA
2D1A	1110	2D1B	3927	DC	XL2*1110* 0A INC, INCREMENT ADDRESS
2D1C	9205	2D1D	3928	DC	XL2*9205* 0B BOC,0 LOOP IF NOT ZERO
2D1E	1010	2D1F	3929	DC	XL2*1010* 0C INC, INCREMENT HI ADDR.
2D20	8016	2D21	3930	DC	XL2*8016* 0D CI, TEST FOR END
2D22	9205	2D23	3931	DC	XL2*9205* 0E BOC,0 RETURN TO LOOP IF NOT
		3932	*		
		3933	*		START READ LOOP
		3934	*		
2D2A	72FF	2D25	3935	DC	XL2*72FF* 0F IC, SET HDB 02 TO INDICATE READ
2D26	2014	2D27	3936	DC	XL2*2014* 10 LR 0,14 START ADDR HI
2D2B	2115	2D29	3937	DC	XL2*2115* 11 LR 1,15 START ADDR LO
2D2A	240F	2D2B	3938	DC	XL2*240F* 12 LR, SET HDB 04 TO START DATA
2D2C	0545	2D2D	3939	DC	XL2*0545* 13 LE, READ M.B. TO HDB 05
2D2E	8405	2D2F	3940	DC	XL2*8405* 14 CIR, COMPARE DATA
2D30	92E2	2D31	3941	DC	XL2*92E2* 15 BOC,0 BRANCH IF ERROR
2D32	1410	2D33	3942	DC	XL2*1410* 16 INC, INCREMENT DATA
2D34	1110	2D35	3943	DC	XL2*1110* 17 INC, INCREMENT ADDRESS
2D36	9213	2D37	3944	DC	XL2*9213* 18 BOC,0 LOOP IF NOT ZERO
2D38	1010	2D39	3945	DC	XL2*1010* 19 INC, INCREMENT HI ADDRESS
2D3A	8016	2D3B	3946	DC	XL2*8016* 1A CI, TEST FOR END ADDRESS
2D3C	9213	2D3D	3947	DC	XL2*9213* 1B BOC,0 LOOP IF NOT END
2D3E	1F10	2D3F	3948	DC	XL2*1F10* 1C INC, INCREMENT THE START DATA
2D40	9201	2D41	3949	DC	XL2*9201* 1D BOC,0 LOOP IF NOT ZERO
2D42	521E	2D43	3950	DC	XL2*521E* 1E HANG, TEST IS COMPLETE
		3951	*		
		3952	*		
		3953	*		
		3954	*		
		3955	*		2ND MICRO PROGRAM
		3956	*		
2D44	7F00	2D44	3957	R2DMC3	EQU *
2D45	3958	2D45	3958	DC	XL2*7F00* 00 IC, SET HDB 0F TO START DATA (00)
2D46	240F	2D47	3959	DC	XL2*240F* 01 LOAD START DATA INTO HDB 04
2D48	7200	2D49	3960	DC	XL2*7200* 02 IC, SET HDB 02 TO INDICATE WRITE
2D4A	2014	2D4B	3961	DC	XL2*2014* 03 LR 0,14 START ADDR HI
2D4C	2115	2D4D	3962	DC	XL2*2115* 04 LR 1,15 START ADDR LO
2D4E	0584	2D4F	3963	DC	XL2*0584* 05 LE, WRITE M.B. FROM HDB 04
2D50	0545	2D51	3964	DC	XL2*0545* 06 LE, READ M.B. DATA TO HDB 05
2D52	8405	2D53	3965	DC	XL2*8405* 07 CIR, COMPARE DATA
2D54	90E1	2D55	3966	DC	XL2*90E1* 08 BOC,0 BRANCH IF NO COMPARE
2D56	1410	2D57	3967	DC	XL2*1410* 09 INC, INCREMENT DATA
2D58	1110	2D59	3968	DC	XL2*1110* 0A INC, INCREMENT ADDRESS
2D5A	9005	2D5B	3969	DC	XL2*9005* 0B BOC,0 LOOP IF NOT ZERO
2D5C	1010	2D5D	3970	DC	XL2*1010* 0C INC, INCREMENT HI ADDR.
2D5E	8016	2D5F	3971	DC	XL2*8016* 0D CI, TEST FOR END
2D60	9005	2D61	3972	DC	XL2*9005* 0E BOC,0 RETURN TO LOOP IF NOT
		3973	*		
		3974	*		START READ LOOP
		3975	*		
2D62	72FF	2D63	3976	DC	XL2*72FF* 0F IC, SET HDB 02 TO INDICATE READ
2D64	2014	2D65	3977	DC	XL2*2014* 10 LR 0,14 START ADDR LO
2D66	2115	2D67	3978	DC	XL2*2115* 11 LR 0,14 START ADDR HI
2D68	240F	2D69	3979	DC	XL2*240F* 12 LR, SET HDB 04 TO START DATA
2D6A	0545	2D6B	3980	DC	XL2*0545* 13 LE, READ M.B. TO HDB 05
2D6C	8405	2D6D	3981	DC	XL2*8405* 14 CIR, COMPARE DATA
2D6E	92E2	2D6F	3982	DC	XL2*92E2* 15 BOC,0 BRANCH IF ERROR
2D70	1410	2D71	3983	DC	XL2*1410* 16 INC, INCREMENT DATA
2D72	1110	2D73	3984	DC	XL2*1110* 17 INC, INCREMENT ADDRESS
2D74	9013	2D75	3985	DC	XL2*9013* 18 BOC,0 LOOP IF NOT ZERO
2D76	1010	2D77	3986	DC	XL2*1010* 19 INC, INCREMENT HI ADDRESS
2D78	8016	2D79	3987	DC	XL2*8016* 1A CI, TEST FOR END ADDRESS
2D7A	9013	2D7B	3988	DC	XL2*9013* 1B BOC,0 LOOP IF NOT END

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
2D7C	1F10	2D7D	3989	DC	XL2*1F10* 1C INC, INCREMENT THE START DATA
2D7E	9001	2D7F	3990	DC	XL2*9001* 1D BOC,0 LOOP IF NOT ZERO
2D80	501E	2D81	3991	R2DMC4	DC XL2*501E* 1E HANG, TEST IS COMPLETE
		3992	*		
2D82	D600	2D82	3993	R2DMC5	EQU * XL2*D600* 000 BAL TO ADDR 600
		2D83	3994	R2DMC6	DC 3995
		2D84	3997	R2DMC7	EQU * 3996
		2D85	3998	R2DMC8	DC XL2*D400* 000 BAL TO ADDR 400
		2D86	4000	R2DMC9	EQU * 4002
		2D87	4001	R2DMCA	DC XL2*DA00* 000 BAL TO ADDR 400
		2D88	4003	R2DMCB	EQU * 4005
		2D89	4004	R2DMCC	DC XL2*D800* 000 BAL TO ADDR 800
2D8A	D9D6E4E340F2F440	2D8A	4006	RT2DOP	DC CL49*ROUT 24 CONTROL STORE TEST (SKIPPED IF SSW 1C ON)*
2D92	C3D6D5E3D9D6D340		4006		
2D9A	E2E3D5D9C540E3C5		4006		
2DA2	E2E3404DE2D2C6D7		4006		
2DAA	D7C5C440C9C64E2		4006		
2DB2	E2E640F1C340D6D5		4006		
2DBA	5D		4006		
2DBB	0000	2DBC	4007	X0000	DC XL2*0000*
2DBD	0800	2DBE	4008	X0800	DC XL2*0800*
2DBF	0C00	2DC0	4009	X0C00	DC XL2*0C00*
2DC1	1000	2DC2	4010	X1000	DC XL2*1000*
2DC3	1400	2DC4	4011	X1400	DC XL2*1400*
2DC5	1800	2DC6	4012	X1800	DC XL2*1800*
		4013	*		
		4014	*		*****
		4015	*		ROUTINE 25 - SPARE
		4016	*		*****
		4017	*		
2DC7	25	2DC7	4018	RT25	DC XL1*25* ROUTINE NUMBER
2DC8	00	2DC8	4019	DC	XL1*00* NO MANUAL INTERVENTION
2DC9	2DE4	2DCA	4020	DC	AL2(RT26) ADDRESS OF NEXT ROUTINE
2DCB	C0 87 021A		4021	B	PRINT
2DCF	01	2DCF	4022	DC	XL1*01*
2DD0	00	2DD0	4023	DC	IL1*13*
2DD1	2DE3	2DD2	4024	DC	AL2(R25HDR)
2DD3	C0 87 0216		4025	B	LINK
2DD7	D9D6E4E340F2F540	2DE3	4026	R25HDR	DC CL13*ROUT 25 SPARE*
2DDF	E2D7C1D9C5		4026		
		4027	*		
		4028	*		*****
		4029	*		ROUTINE 26 - LIO HDB 1A TESTS
		4030	*		*****
		4031	*		
		4032	*		THIS ROUTINE CHECKS THE TSN THAT DETERMINES THAT HDB 1A HAS
		4033	*		BEEN LOADED BY THE PROGRAM. IT CHECKS THAT THE TSN COMES ON
		4034	*		PROPERLY AND THAT IT IS RESET BY SSF C. IT ALSO TESTS THAT
		4035	*		THE TSN DOES NOT COME ON IF ANY OTHER HDB'S ARE LOADED.
		4036	*		*****
		4037	*		
		4038	*		
2DE4	20	2DE4	4039	RT26	DC XL1*26* ROUTINE NUMBER
2DE5	00	2DE5	4040	DC	XL1*00* NO MANUAL INTERVENTION
2DE6	2E5F	2DE7	4041	DC	AL2(RT27) ADDRESS OF NEXT ROUTINE
		4042	*		
2DE8	C2 01 2DF4	2DF4	4043	USING	RIBK01,XR1 INITIALIZE XR1 FOR INDEXING
			4044	LA	RIBK01,XR1
			4045	*	
2DEC	C0 87 021A		4046	B	PRINT PRINT ROUTINE HEADING
2DF0	01	2DF0	4047	DC	XL1*01*
2DF1	15	2DF1	4048	DC	IL1*21*
2DF2	2E4A	2DF3	4049	DC	AL2(RT18OP)



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ERR LOC OBJECT CODE	ADDR STMT SOURCE STATEMENT
2DF4 C0 87 5918	4050
2DF8 83	4051 R1BK01 B LOADCS 4052 DC XL1'83'
2DF9 2E4B	4053 *
2DF8 2E5E	2DFA 4054 DC AL2(R1BMC5) 2DFC 4055 DC AL2(R1BMC6)
2DF0 C0 87 54FE	4056
2E01 69	4057 B DOMICR
2E02 5002	2E01 4058 DC XL1'69'
2E04 31 4D 0D56	2E03 4J59 DC XL2'5002'
2E08 C0 87 54FE	4060
2E0C 6A	4061 LIO XAA55,MDE5
2E0D 5007	4062
2E0F 31 48 0D62	4063 B DOMICR
2E13 31 49 0D62	2E0C 4064 DC XL1'6A'
2E17 31 4A 0D62	2E0E 4065 DC XL2'5007'
2E18 31 4B 0D62	4066
2E1F 31 4C 0D62	4067 LIO ZERO,MDB0
2E23 31 4E 0D62	4068 LIO ZERO,MDB1
2E27 31 4F 0D62	4069 LIO ZERO,MDE2
2E28 C0 87 54FE	4070 LIO ZERO,MDB3
2E2F 6C	4071 LIO ZERO,MDB4
2E30 5009	2E2F 4072 LIO ZERO,MDB6
2E32 C0 87 0216	4073 LIO ZERO,MDB7
2E36 D9D6E4E340F2F 640	4074 B DOMICR
2E3E E3E2D540D3C9D 440	2E31 4075 DC XL1'6C'
2E46 CB4C2F1C1	4076 DC XL2'5009'
	4077 B LINK
	4078
	4079
	4080 RT1BOP DC CL21'ROUT 26 TSN LIO MDB1A'
	4080
	4080
	4081
	4082 *-----*
	4083 * START OF MICROPROGRAM LISTING *
	4084 *-----*
2E4B 1C08	2E48 4085 R1BMC5 EQU *
2E4D 49E0	2E4C 4086 DC XL2'1C08' 00 SSF, RESET TSN 9
2E4F 5002	2E4E 4087 DC XL2'49E0' 01 TSN, MUST NOT BRANCH
2E51 4905	2E50 4088 DC XL2'5002' 02 HANG, END OF FIRST PHASE
2E53 5004	2E52 4089 DC XL2'4905' 03 TSN, MUST BRANCH
2E55 1C08	2E54 4090 DC XL2'5004' 04 ERROR, HANG
2E57 49E1	2E56 4091 DC XL2'1C08' 05 SSF, RESET TSN 9
2E59 5007	2E58 4092 DC XL2'49E1' 06 TSN, MUST NOT BRANCH
2E5B 49E2	2E5A 4093 DC XL2'5007' 07 HANG, END OF PHASE 2
2E5D 5009	2E5C 4094 DC XL2'49E2' 08 TSN, 9 MUST NOT BRANCH
	2E5E 4095 R1BMC6 DC XL2'5009' 09 HANG, END OF TEST
	4096
	4096
	4097 *-----*
	4098 * ROUTINE 27 - SPARE
	4099 *-----*
2E5F 27	4100
2E60 00	2E5F 4101 RT27 DC XL1'27'
2E61 2E7C	2E60 4102 DC XL1'00'
2E63 C0 87 021A	2E62 4103 DC AL2(RT28)
2E67 01	4104 B PRINT
2E68 0D	2E67 4105 DC XL1'01'
2E69 2E7B	2E68 4106 DC IL1'13'
2E6E C0 87 0216	2E6A 4107 DC AL2(R27HDR)
2E6F D9D6E4E340F2F 740	4108 B LINK
2E77 E2D7C1D9C5	2E7B 4109 R27HDR DC CL13'ROUT 27 SPARE'
	4109
	4110
	4111
	4111
	4112 *-----*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

2E7C 28	4113 *	ROUTINE 28 - SIO NON-IMMEDIATE TESTS
2E7D 00	4114 *****	
2E7E 2E99	4115 *	
	4116 *	
	4117 *	THIS ROUTINE TESTS THAT WHEN A SIO NON-IMM IS ISSUED, THE
	4118 *	IR/IQ BITS ARE LOADED INTO HDB 16-17, AND THAT THE ATTACHMENT
	4119 *	BECOMES BUSY WHEN THE SIO SVC REQ. LATCH COMES ON. IT THEN
	4120 *	TESTS THAT THE MICROPROGRAM CAN RESET SIO SVC REQ WITH SSF C.
	4121 *	IT THEN CHECKS TO BE SURE THAT THE HDB'S BEING MANIPULATED
	4122 *	DURING THE IQ/IR CYCLES OF THE SIO NON-IMM WERE HANDLED
	4123 *	CORRECTLY. THE MICROPROGRAM IS THEN RERUN AND A TEST IS MADE
	4124 *	TO ASSURE THAT A SIO NON-IMMEDIATE ISSUED WHILE THE ATTACH-
	4125 *	MENT IS BUSY WILL HANG THE CPU UNTIL BUSY DROPS.
	4126 *****	
	4127	
2E80 C0 87 021A	2E7C 4128 RT28 DC XL1'28'	ROUTINE NUMBER
2E84 01	2E7D 4129 DC XL1'00'	NO MANUAL INTERVENTION
2E85 0D	2E7E 4130 DC AL2(RT29)	ADDRESS OF NEXT ROUTINE
2E86 2E98	4131	
2E88 C0 87 0216	4132 B PRINT	PRINT ROUTINE HEADING
2E8C D9D6E4E340F2F 640	2E84 4133 DC XL1'01'	
2E94 E2D7C1D9C5	2E85 4134 DC IL1'13'	
	2E87 4135 DC AL2(R28HDR)	
	4136 B LINK	
	2E98 4137 R28HDR DC CL13'ROUT 28 SPARE'	*TERMINATE
	4137	
	4138	
	4139 *****	
	4140 *	ROUTINE 29 - TRANSMIT & RECEIVE WORD READY TESTS
	4141 *****	
	4142 *	
	4143 *	THIS ROUTINE CHECKS THAT TRANSMIT AND RECEIVE WORD READY AND
	4144 *	THE INVOLVED TSN'S ARE WORKING PROPERLY. A WORD OF ZEROS
	4145 *	IS TRANSMITTED AND WRAPPED BACK IN DIAGNOSTIC MODE. NO CHECK
	4146 *	IS MADE ON THE DATA.
	4147 *	
	4148 *****	
	4149	
2E99 29	2E99 4150 RT29 DC XL1'29'	ROUTINE NUMBER
2E9A 00	2E9A 4151 DC XL1'00'	NO MANUAL INTERVENTION
2E9B 2F40	2E9C 4152 DC AL2(RT2A)	ADDRESS OF NEXT ROUTINE
	4153	
2E9D C2 01 2EA9	2EA9 4154 USING R1EK01,XR1	INITIALIZE XR1 FOR INDEXING
	4155 LA R1EK01,XR1	
	4156	
2EA1 C0 87 021A	4157 B PRINT	PRINT ROUTINE HEADING
2EA5 01	2EA5 4158 DC XL1'01'	
2EA6 1D	2EA6 4159 DC IL1'29'	
2EA7 2EES	2EA8 4160 DC AL2(RT1EOP)	
	4161	
2EA9 C0 87 5918	4162 R1EK01 B LOADCS	
2EAD 83	2EAD 4163 DC XL1'83'	*GO LOAD MICROPROGRAM
	4164 *	*DISABLE UPON ENTRY, FILL 2ND
2EAE 2EE6	2EAF 4165 DC AL2(R1EMCS)	FSQ WITH BCS,0 ON ADDRESS
2EB0 2F3F	2EB1 4166 DC AL2(R1EMCE)	*START OF MICRO CODE
	4167	*END OF MICROCODE
2EB2 F3 58 E0	4168	
2EB5 0D 1D 5512 56 12	4169 SIO X'E0'.SICI	*ENABLE MICROCONTROLLER TO
2EBB F3 58 80	4170 CLC REPEAT(30).REPEAT	DO A DRY RUN TO SET UP
	4171 SIO X'60'.SIOI	POWER UP CONDITIONS
2EBE C0 87 54FE	4172 B DOMICR	
2EC2 80	2EC2 4173 DC XL1'80'	*GC EXECUTE MICROPROGRAM
2EC3 5025	2EC4 4174 DC XL2'5025'	*ERROR HALT -80-
	4175	*EXPECTED RESULT
2EC5 C0 87 0216	4176 B LINK	
	4177	
2EC9 D9D6E4E340F2F 940	2EB5 4178 RT1EOP DC CL29'ROUT 29 XMIT & RCV WORD READY'	
2ED1 E7D4C9E340504 09	4178	

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for the display adapter test routine.

4230 \*\*\*\*\*
4231 \* ROUTINE 2A - DATA WRAP TEST (ALL BITS) \*
4232 \*\*\*\*\*
4233 \*
4234 \* THIS ROUTINE WRAPS ALL BITS IN DIAGNOSTIC MODE AND TESTS
4235 \* THAT THE BITS RECEIVED ARE THE SAME AS THOSE TRANSMITTED.
4236 \* THE DATA TO BE USED IS SUPPLIED BY PRE-LOADING HDB 10-11.
4237 \* THE DATA PATTERN IS WRAPPED AND CHECKED 255 TIMES. THE
4238 \* MICROPROGRAM FOR THIS ROUTINE IS USED FOR THE NEXT 3 ROUTINES
4239 \* BY SUPPLYING DIFFERENT DATA TO HDB 10-11.
4240 \*
4241 \*\*\*\*\*
4242
2F40 2A 2F40 4243 RTEA DC XL1\*2A\* ROUTINE NUMBER

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for the display adapter test routine.

2FA7 4288 R1FMCS EQU \*
2FA8 4289 DC XL2\*7A00\* 00 IC ZERO OUT HDB A.
2FA9 4290 DC XL2\*5038\* 01 BOS.0 TO ADDR 038.
2FAB 4291 DC XL2\*5002\* 02 ERROR. HANG
2FAD 4292 DC XL2\*2010\* 03 LR, HDB 00 = BITS 2,3,13 TO BE WRAPPED
2FAE 4293 DC XL2\*2111\* 04 LR, HDB 01 = BITS 4-11 TO BE WRAPPED
2FB1 4294 DC XL2\*74FF\* 05 IC, SET RESET PATTERN TO FF
2FB3 4295 DC XL2\*E100\* 06 CI, TEST BITS TO BE WRAPPED = 00
2FB5 4296 DC XL2\*9C09\* 07 BOS.3 IF SO LEAVE RESET PATTERN = FF
2FB7 4297 DC XL2\*7400\* 08 IC, CHANGE RESET PATTERN TO 00
2FB9 4298 DC XL2\*7500\* 09 IC, RESET REC. CHK. INDICATOR
2FBB 4299 DC XL2\*1508\* 0A SSF, RESET REC. CHK.
2FBD 4300 DC XL2\*7683\* 0B IC, INITIALIZE RECEIVE HDB 06
2FBE 4301 DC XL2\*2704\* 0C LR, INITIALIZE RECEIVE HDB 07
2FC1 4302 DC XL2\*7301\* 0D INITIALIZE COUNTER TO 01
2FC3 4303 DC XL2\*1008\* 0E RESET I/O REG BITS 2,3,13
2FC5 4304 DC XL2\*1F04\* 0F SSN, SET ON DIAGNOSTIC MODE
2FC7 4305 DC XL2\*F002\* 10 TBN, CHECK FOR BIT 2 TO BE ON
2FC9 4306 DC XL2\*9013\* 11 BCC,0 BRANCH IF BIT 2 SHOULD BE OFF
2FCB 4307 DC XL2\*1204\* 12 SSN, SET BIT 2 OF I/O REG DN
2FCD 4308 DC XL2\*F001\* 13 TBN, CHECK FOR BIT 3 TO BE OFF

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for display adapter test, including instructions like BOC, SSN, LE, TSN, SSF, SBF, INC, and various data error handling routines.

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Continuation of assembly code from page 35, including routines for data wrap, initialization, and error handling.

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```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
4443 *
4444 *****
4445
30C1 2C 30C1 4446 RT2C DC XL1*2C* ROUTINE NUMBER
30C2 00 30C2 4447 DC XL1*00* NO MANUAL INTERVENTION
30C3 3130 30C4 4448 DC AL2(RT2D) ADDRESS OF NEXT ROUTINE
4449
4450 B PRINT PRINT ROUTINE HEADING
30C9 01 30C9 4451 DC XL1*01*
30CA 19 30CA 4452 DC IL1*25*
30CB 312F 30CC 4453 DC AL2(RT21CP)
4454
30E3 4455 USING R21K01,XR1 INITIALIZE XR1 FOR INDEXING
30CD C2 01 30E3 4456 R21ST LA R21K01,XR1
4457
4458 MVC R1FMCE-6(2),HDB900
4459 MVC R1FMCE-4(2),LISELA
4460 MVC R1FMCE-2(2),WRPIN
30E7 83 30E7 4462 DC XL1*83*
4463 *
30E8 2FA7 30E9 4464 DC AL2(R1FMCS)
30EA 3028 30EB 4465 DC AL2(R1FMCE)
4466
30EC 31 48 274D 4467 LIO X02AA,HDE0
30FD 3C 10 5564 4468 MVI LPCNT,X*10*
30FA 3A 01 554D 4469 SBN EMBP,X*01*
30FB C0 87 54FE 4470 B DOMICR
30FC 86 30FC 4471 DC XL1*86*
30FD 5037 30FE 4472 R21EX1 DC XL2*5037*
30FF 4D 01 1B 5FE6 4473 CLC R21EX1(2,XR1),STATAC
3104 F2 81 04 4474 JE R21B01
3107 C0 87 525A 4475 B PICREG
4476
310B 3D 42 0A03 4477 R21B01 CLI PRTN,X*42*
310F C0 81 4FF4 4478 BE R00R2
3113 C0 87 0216 4479 B LINK
4480
3117 D9D6E4E340F2C340 312F 4481 RT21OP DC CL25*ROUT 2C XMIT/REC ALT BITS*
311F E7D4C9E361D9CEC3 4481
3127 40C1D3E340C2C4E3 4481
312F E2 4481
4482
4483 *****
4484 * ROUTINE 2D - DATA WRAP (ALTERNATE BITS 55) *
4485 *****
4486 * THIS ROUTINE IS LIKE THE LAST ROUTINE EXCEPT THAT ALT. (55) *
4487 * BITS ARE WRAPPED. THE MICROPROGRAM LOADED AND EVERYTHING *
4488 * EXCEPT THE DATA IS THE SAME. *
4489 *
4490 *
4491 *****
4492
3130 2D 3130 4493 RT2D DC XL1*2D* ROUTINE NUMBER
3131 00 3131 4494 DC XL1*00* NO MANUAL INTERVENTION
3132 3199 3133 4495 DC AL2(RT2E) ADDRESS OF NEXT ROUTINE
4496
3152 4497 USING R22K01,XR1 INITIALIZE XR1 FOR INDEXING
3134 C2 01 3152 4498 LA R22K01,XR1
4499
4500 B PRINT PRINT ROUTINE HEADING
3138 C0 87 021A 4501 DC XL1*01*
313C 01 313D 4502 DC IL1*25*
313E 3196 313F 4503 DC AL2(RT22OP)
4504
3140 0C 01 3022 303A 4505 MVC R1FMCE-6(2),HDB900
3146 0C 01 3024 303C 4506 MVC R1FMCE-4(2),LISELA

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
314C 0C 01 3026 3046 4507 MVC R1FMCE-2(2),WRPIN
3152 C0 87 5918 4508 R22K01 B LOADCS
3156 83 3156 4509 DC XL1*83*
4510 *
3157 2FA7 3158 4511 DC AL2(R1FMCS)
3159 3028 315A 4512 DC AL2(R1FMCE)
4513
315B 31 48 3198 4514 LIO X0155,HDB0
315F 3C 10 5564 4515 MVI LPCNT,X*10*
3163 3A 01 554D 4516 SBN EMBP,X*01*
3167 C0 87 54FE 4517 B DOMICR
3168 88 316B 4518 DC XL1*88*
316C 5037 316D 4519 R22EX1 DC XL2*5037*
316E 4D 01 1B 5FE6 4520 CLC R22EX1(2,XR1),STATAC
3173 F2 81 04 4521 JE R22B01
3176 C0 87 525A 4522 B PICREG
4523
317A C0 87 0216 4524 R22B01 B LINK
4525
317E D9D6E4E340F2C440 3196 4526 RT22OP DC CL25*ROUT 2D XMIT/REC ALT BITS*
3186 E7D4C9E361D9CEC3 4526
318E 40C1D3E340C2CE3 4526
3196 E2 4526
3197 0155 3198 4527 X0155 DC XL2*0155*
4528
4528 *****
4529 ***** ROUTINE 2E - TRANSMIT ZEROES TEST *****
4530 *
4531 *****
4532 *
4533 * THIS ROUTINE CHECKS SSN 0 WHICH CAUSES THE ATTACHMENT TO
4534 * TRANSMIT 13 ZEROES INSTEAD OF THE DATA IN THE I/O REGISTER.
4535 * SSN 0 IS TURNED ON AND THE I/O REG IS LOADED TWICE. AT THE
4536 * END OF 13 CYCLES RECEIVE WORD READY IS CHECKED TO ASSURE IT
4537 * DID NOT COME ON (INDICATES ALL ZEROES TRANSMITTED). THEN
4538 * 13 MORE CYCLES LATER RECEIVE WORD READY MUST COME ON AND THE
4539 * WORD RECEIVED IS CHECKED TO BE SURE IT IS THE SAME AS THE
4540 * ONE TRANSMITTED. THIS ROUTINE IS DONE BY WRAPPING IN DIAG-
4541 * NOSTIC MODE.
4542 *
4543 *****
4544
3199 2E 3199 4545 RT2E DC XL1*2E* ROUTINE NUMBER
319A 00 319A 4546 DC XL1*00* NO MANUAL INTERVENTION
319B 3244 319C 4547 DC AL2(RT2F) ADDRESS OF NEXT ROUTINE
4548
31A9 4549 USING R23K01,XR1 INITIALIZE XR1 FOR INDEXING
31A9 4550 LA R23K01,XR1
4551
31A1 C0 87 021A 4552 B PRINT PRINT ROUTINE HEADING
31A5 01 31A5 4553 DC XL1*01*
31A6 13 31A6 4554 DC IL1*19*
31A7 31D3 31A8 4555 DC AL2(RT23CP)
4556
31A9 C0 87 5918 31AD 4557 R23K01 B LOADCS
31AD 83 31AD 4558 DC XL1*83*
4559 *
31AE 31D4 31AF 4560 DC AL2(R23MCS)
31B0 3243 31B1 4561 DC AL2(R23MCE)
4562
31B2 3C 20 5564 4563 MVI LPCNT,X*20*
31B6 C0 87 54FE 4564 B DOMICR
31BA 8A 31BA 4565 DC XL1*8A*
31BB 5035 31BC 4566 DC XL2*5033*
4567
31BD C0 87 0216 4568 B LINK
4569
31C1 D9D6E4E340F2C440 31D3 4570 RT23OP DC CL19*ROUT 2E XMIT ZEROES*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

31C9 E7D4C9E340E9C5D9 4570  
31D1 D6C5E2 4570  
4571  
31D4 4572 R23MCS EQU \*  
31D4 5034 31D5 4573 DC XL2'5034' 00 BOS.0 GO SET INSIDE WRAP  
31D6 0889 31D7 4574 DC XL2'0889' 01 LE. DESELECT ALL LINES  
31D8 7300 31D9 4575 DC XL2'7300' 02 IC. SET COUNTER (HDB 03) TO ZERO  
31DA 1008 31DB 4576 DC XL2'1008' 03 SSF.0 RESET I/O REG BITS 2,3,13  
31DC 7FAA 31DD 4577 DC XL2'7FAA' 04 IC. SET HDB OF = AA (BITS TO BE XMITTED)  
31DE 7400 31DF 4578 DC XL2'7400' 05 IC. RESET HDB 04 (RECEIVE REG.)  
31E0 1304 31E1 4579 DC XL2'1304' 06 SSN.3 SET BIT 3 OF I/O REG ON  
31E2 1F04 31E3 4580 DC XL2'1F04' 07 SSN.F SET DIAGNOSTIC MODE ON  
31E4 1004 31E5 4581 DC XL2'1004' 08 SSN.0 SET XMIT ZEROES ON  
31E6 078F 31E7 4582 DC XL2'078F' 09 LOAD I/O REG & XMIT 13 ZEROES  
31E8 500B 31E9 4583 DC XL2'500B' 0A BOS.0 WAIT A CYCLE  
31EA 078F 31EB 4584 DC XL2'078F' 0B LOAD I/O REG AGAIN TO XMIT DATA  
31EC 400E 31ED 4585 DC XL2'400E' 0C TSN.0 MUST BRANCH (XMIT WD RDY ON)  
31EE 500D 31EF 4586 DC XL2'500D' 0D ERROR. HANG  
31F0 41E1 31F1 4587 DC XL2'41E1' 0E TSN.1 MUST NOT BRANCH (REC. WD RDY OFF)  
31F2 5010 31F3 4588 DC XL2'5010' 0F BOS.0 TO COUNT CYCLES  
31F4 5011 31F5 4589 DC XL2'5011' 10  
31F6 5012 31F7 4590 DC XL2'5012' 11  
31F8 5013 31F9 4591 DC XL2'5013' 12  
31FA 5014 31FB 4592 DC XL2'5014' 13  
31FC 5015 31FD 4593 DC XL2'5015' 14  
31FE 5016 31FF 4594 DC XL2'5016' 15  
3200 5017 3201 4595 DC XL2'5017' 16  
3202 5018 3203 4596 DC XL2'5018' 17  
3204 41E2 3205 4597 DC XL2'41E2' 18 TSN.1 MUST NOT BRANCH  
3206 40E3 3207 4598 DC XL2'40E3' 19 TSN.0 MUST NOT BRANCH  
3208 41E4 3209 4599 DC XL2'41E4' 1A TSN.1 MUST NOT BRANCH  
320A 1008 320B 4600 DC XL2'1008' 1B SSF.0 RESET I/O REG BITS 2,3,13  
320C 41E5 320D 4601 DC XL2'41E5' 1C TSN.1 MUST NOT BRANCH  
320E 41E6 320F 4602 DC XL2'41E6' 1D IN FOLLOWING SEQUENCE OF WORDS  
3210 41E7 3211 4603 DC XL2'41E7' 1E  
3212 41E8 3213 4604 DC XL2'41E8' 1F  
3214 41E9 3215 4605 DC XL2'41E9' 20  
3216 41EA 3217 4606 DC XL2'41EA' 21  
3218 41EB 3219 4607 DC XL2'41EB' 22  
321A 41EC 321B 4608 DC XL2'41EC' 23  
321C 4127 321D 4609 DC XL2'4127' 24 TSN.1 MUST BE ON (REC. WD RDY.)  
321E 5025 321F 4610 DC XL2'5025' 25 DUMMY WORD  
3220 5026 3221 4611 DC XL2'5026' 26 ERROR. HANG  
3222 0444 3223 4612 DC XL2'0444' 27 LE. EMPTY I/O REG  
3224 41EE 3225 4613 DC XL2'41EE' 28 TSN.1 MUST NOT BRANCH AGAIN  
3226 42EF 3227 4614 DC XL2'42EF' 29 TSN.2 MUST NOT BRANCH (I/O REG 2 OFF)  
3228 432C 3229 4615 DC XL2'432C' 2A TSN.3 MUST BRANCH (I/O REG 3 ON)  
322A 502B 322B 4616 DC XL2'502B' 2B ERROR. HANG  
322C B40F 322D 4617 DC XL2'B40F' 2C CIR. CHECK DATA SAME AS XMITTED  
322E 9C2F 322F 4618 DC XL2'9C2F' 2D BOS.3 MUST BRANCH  
3230 502E 3231 4619 DC XL2'502E' 2E ERROR. HANG  
3232 48FF 3233 4620 DC XL2'48FF' 2F TSN.B REC. CHK. MUST BE OFF  
3234 1310 3235 4621 DC XL2'1310' 30 INC. INCR. COUNTER  
3236 9C33 3237 4622 DC XL2'9C33' 31 BOS.3 BRANCH IF TEST CVER  
3238 5008 3239 4623 DC XL2'5008' 32 BOS.0 RESTART TEST  
323A 5033 323B 4624 DC XL2'5033' 33 HANG. TEST COMPLETED OKAY  
323C 1E04 323D 4625 DC XL2'1E04' 34 SSN.E TURN ON INSIDE WRAP  
323E 7900 323F 4626 DC XL2'7900' 35 IC. PUT 00 IN HDB 9 TO DESELECT LINES  
3240 0A69 3241 4627 DC XL2'0A69' 36 LE. DESELECT ALL ALT LINES.  
3242 5001 3243 4628 R23MCE DC XL2'5001' 37 BOS.0 RETURN TO ADDRESS 001

4629  
4630 \*\*\*\*\*  
4631 \* ROUTINE 2F - RECEIVE CHECK TESTS  
4632 \*\*\*\*\*  
4633 \*  
4634 \* THIS ROUTINE TESTS THAT THE PARITY CHECK CIRCUITS ON THE DATA  
4635 \* RECEIVED BY THE I/O REG ARE WORKING PROPERLY. THIS IS DONE BY \*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

4636 \* PUTTING THE ATTACHMENT IN DIAGNOSTIC MODE AND ACTIVATING SSN 6 \*  
4637 \* WHICH BLOCKS THE PARITY BIT ON THE WORD TRANSMITTED THEREBY \*  
4638 \* CAUSING A PARITY CHECK IF BIT 12 SHOULD HAVE BEEN ON. ALL \*  
4639 \* BITS ARE USED IN BOTH THEIR 0 AND 1 STATES. \*  
4640 \* \*  
4641 \*\*\*\*\*  
4642 \*\*\*\*\*  
3244 2F 3244 4643 RT2F DC XL1'2F' ROUTINE NUMBER  
3245 00 3245 4644 DC XL1'00' NO MANUAL INTERVENTION  
3246 32EB 3247 4645 DC AL2(RT30) ADDRESS OF NEXT ROUTINE  
4646  
3254 4647 USING R24K01.XR1  
4648 LA R24K01.XR1 INITIALIZE XRI FOR INDEXING  
4649  
324C C0 87 021A 4650 B PRINT  
3250 01 3250 4651 DC XL1'01' PRINT ROUTINE HEADING  
3251 17 3251 4652 DC IL1'23'  
3252 3282 3253 4653 DC AL2(RT24CP)  
4654  
3254 C0 87 5918 4655 R24K01 B  
3258 83 3258 4656 DC XL1'83' .GO LOAD MICROPROGRAM  
4657 \* .DISABLE UPON ENTRY. FILL 2ND  
3259 3283 325A 4658 DC AL2(R24MCS) FSG WITH BCS.0 ON ADDRESS  
325B 32EA 325C 4659 DC AL2(R24MCE) .START OF MICRO CODE  
4660 .END OF MICROCODE  
325D 3C 0F 5564 4661 MVI LPCNT,X'0F'  
3261 C0 87 54FE 4662 B DOMICR .INCREASE MICROPROGRAM DELAY  
3265 8E 3265 4663 DC XL1'8E' .GO EXECUTE MICROPROGRAM  
3266 502F 3267 4664 DC XL2'502F' .ERROR HALT -BE-  
4665 .EXPECTED DATA  
3268 C0 87 0216 4666 B LINK .GO TO NEXT ROUTINE  
4667  
326C D9D6E4E340F2C640 3282 4668 RT24OP DC CL23\*ROUT 2F TEST REC. CHECK\*  
3274 E3C5E2E340D9C2C3 4668  
327C 4B40C3C8C5C3D2 4668  
4669

4670 \*\*\*\*\*  
4671 \* START OF MICROPROGRAM LISTING \*  
4672 \*\*\*\*\*

3283 5030 3283 4673 R24MCS EQU \*  
3284 4674 DC XL2'5030' 00 BOS.0 GO SET INSIDE WRAP  
3285 0889 3286 4675 DC XL2'0889' 01 DESELECT LINES  
3287 7300 3288 4676 DC XL2'7300' 02 IC. SET COUNTER TO ZERO  
3289 1008 328A 4677 DC XL2'1008' 03 SSF.0 RESET I/O REG BITS 2,3,13  
328B 1508 328C 4678 DC XL2'1508' 04 SSF.5 RESET REC. CHK.  
328D 74AA 328E 4679 DC XL2'74AA' 05 IC. SET HDB 4 TO XMIT 1ST PATTERN  
328F 1F04 3290 4680 DC XL2'1F04' 06 SSN.F SET DIAGNOSTIC MODE  
3291 1604 3292 4681 DC XL2'1604' 07 SSN.6 SET BLOCK BIT 12 (PARITY)  
3293 1204 3294 4682 DC XL2'1204' 08 SSN.2 TURN ON BIT 2 OF I/O REG  
3295 0784 3296 4683 DC XL2'0784' 09 LE. LOAD I/O REG & XMIT WORD  
3297 410C 3298 4684 DC XL2'410C' 0A TSN.1 WAIT FOR REC. WD. RDY ON  
3299 500A 329A 4685 DC XL2'500A' 0B BOS.0 BRANCH BACK  
329B 480E 329C 4686 DC XL2'480E' 0C TSN.B REC. CHK MUST BE ON  
329D 500D 329E 4687 DC XL2'500D' 0D ERROR. HANG  
329F 1508 32A0 4688 DC XL2'1508' 0E SSF.5 RESET RECEIVE CHK.  
32A1 4BE1 32A2 4689 DC XL2'4BE1' 0F TSN.B MUST NOT BRANCH  
32A3 0644 32A4 4690 DC XL2'0644' 10 LE. PUT I/O REG IN HDB 06  
32A5 1008 32A6 4691 DC XL2'1008' 11 SSF.0 RESET I/O REG 2,3,13  
32A7 1604 32A8 4692 DC XL2'1604' 12 SSN.6 SET BLOCK BIT 12 (PARITY)  
32A9 7555 32AA 4693 DC XL2'7555' 13 SET HDB 5 TO NEW PATTERN  
32AB 1304 32AC 4694 DC XL2'1304' 14 SSN.3 SET BIT 3 OF I/O REG  
32AD 0785 32AE 4695 DC XL2'0785' 15 LE. LOAD I/O REG WITH NEW PATTERN  
32AF 4118 32B0 4696 DC XL2'4118' 16 TSN.1 WAIT FOR REC WD RDY TO COME ON  
32B1 5016 32B2 4697 DC XL2'5016' 17 BOS.0 LOOP BACK TO PREV. WD  
32B3 0644 32B4 4698 DC XL2'0644' 18 LE. UNLOAD I/O REG TO HDB 6  
32B5 4818 32B6 4699 DC XL2'4818' 19 TSN.B REC. CHK. MUST BE ON  
32B7 501A 32B8 4700 DC XL2'501A' 1A ERROR. HANG  
32B9 1508 32BA 4701 DC XL2'1508' 1B SSF.5 RESET REC. CHK.

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routine 30 - CURAR SET DURING RECEIVE DATA MODE.

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routine 30 - CURAR SET DURING RECEIVE DATA MODE, including a microprogram listing.



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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
4964 * PHASE SETS UP THE VARIOUS SIGNALS. AN ATTACHMENT RESET IS *
4965 * THEN GIVEN AND THE SECOND PHASE OF THE MICROPROGRAM TESTS THAT *
4966 * THE LINES WERE PROPERLY RESET. THE LINES TESTED ARE: *
4967 * SSN F DIAGNOSTIC MODE *
4968 * TSN 0 TRANSMIT WORD READY *
4969 * TSN 1 RECEIVE WORD READY *
4970 * SSN B RECEIVE DATA MODE *
4971 * ESN D INTERRUPT REQUEST *
4972 *
4973 *****
4974
3498 32 3498 4975 RT32 DC XL1'32' ROUTINE NUMBER
3499 00 3499 4976 DC XL1'00' NO MANUAL INTERVENTION
349A 355A 3498 4977 DC AL2(RT33) .ADDRESS OF NEXT ROUTINE
4978
349C C2 01 34A8 34A8 4979 USING R29K01.XR1 INITIALIZE XR1 FOR INDEXING
4980 LA R29K01.XR1
4981
34A0 C0 87 021A 4982 B PRINT PRINT ROUTINE HEADING
34A4 01 34A4 4983 DC XL1'01'
34A5 12 34A5 4984 DC IL1'18'
34A6 34DD 34A7 4985 DC AL2(RT29CP)
4986
34A8 C0 87 5918 4987 R29K01 B LOADCS .GO LOAD MICROPROGRAM
34AC 83 34AC 4988 DC XL1'83' .DISABLE UPON ENTRY. FILL 2ND
4989 * FSO WITH BCS.0 ON ADDRESS
34AD 34DE 34AE 4990 DC AL2(R29MCS) .START OF MICRO CODE
34AF 3559 34B0 4991 DC AL2(R29MCE) .END OF MICROCODE
4992
34B1 31 48 0D62 4992 LIO ZERO.HDB0 .SET HDB 10-11 = 0
34B5 F3 58 E0 4993 SIO X'E0'.SIOI .START MICROPROGRAM
34B8 0D 12 34A8 34B8 4994 SLC R29K01(151).R29K01 .DELAY 42 CYCLES
34BE F3 58 80 4996 SIO X'80'.SIOI .DISABLE ATTACHMENT (RESET)
4997
34C1 C0 87 54FE 4998 B DOMICR .GO DO SECOND PART OF MICRO
34C5 99 34C5 4999 DC XL1'99' .ERROR HALT -99-
34C6 5036 34C7 5000 DC XL2'5036' .EXPECTED RESULT
5001
34C8 C0 87 0216 5002 B LINK .GO TO NEXT ROUTINE
5003
34CC D9D6E4E340F3F240 34DD 5004 RT29OP DC CL18*ROUT 32 ATTACH RST*
34DA C1E3E3C1C3C84 09 5004
34DC E2E3 5004
5005
5006 *-----*
5007 * START OF MICROPROGRAM LISTING *
5008 *-----*
34DE 5009 R29MCS EQU *
34DF 5010 DC XL2'5037' 00 BOS.0 GO TO ADD.37
34E1 5011 DC XL2'7900' 01 IC. SET HDB 09 TO DE-SELECT
34E3 5012 DC XL2'0A89' 02 LE. DE-SELECT FIRST DR/RC
34E4 F2FF 34E5 5013 DC XL2'F2FF' 03 TBN. CHECK HCB 02 FOR 2ND PHASE (FF)
34E6 9C1C 34E7 5014 DC XL2'9C1C' 04 BOC.3 IF SO BRANCH TO 2ND PHASE
34E8 72FF 34E9 5015 DC XL2'72FF' 05 IC. SET HDB 2 TO FF
34EA 2022 34EB 5016 DC XL2'2022' 06 LR. SET HDB 10 TO FF
34EC 7000 34ED 5017 DC XL2'7000' 07 IC. SET MBAR HI = 00
34EE 7100 34EF 5018 DC XL2'7100' 08 IC. SET MBAR LO = 00
34F0 1804 34F1 5019 DC XL2'1804' 09 SSN.B SET REC. DATA MODE
34F2 500B 34F3 5020 DC XL2'500B' 0A DUMMY WORD
34F4 1E04 34F5 5021 DC XL2'1E04' 0B SSN.E SET INSIDE WRAP ON
34F6 1C04 34F7 5022 DC XL2'1C04' 0C SSN.C SET INTR. REG. ON
34F8 1F04 34F9 5023 DC XL2'1F04' 0D SSN.F SET DIAGNOSTIC MODE ON
34FA 1008 34FB 5024 DC XL2'1008' 0E SSF.0 RESET BITS 2,3,13 IN I/O REG
34FC 7443 34FD 5025 DC XL2'7443' 0F IC. SET HDB 04 = 43
34FE 1204 34FF 5026 DC XL2'1204' 10 SSN.2 SET BIT 2 OF I/O REG
3500 1304 3501 5027 DC XL2'1304' 11 SSN.3 SET BIT 3 OF I/O REG ON
3502 1004 3503 5028 DC XL2'1004' 12 SSN.0 SET TRANSMIT ZEROES
3504 0784 3505 5029 DC XL2'0784' 13 LE. LCAD I/O REG TO XMIT ZEROES

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
3506 5015 3507 5030 DC XL2'5015' 14 BOS.0 DELAY 1 CYCLE
3508 0784 3509 5031 DC XL2'0784' 15 LE. LOAD I/O REG TO XMIT WORD
350A 4118 350B 5032 DC XL2'4118' 16 TSN.1 WAIT FOR REC. WD RDY TO COME ON
350C 5016 350D 5033 DC XL2'5016' 17 BOS.0 LOOP BACK TO PREV. WD
350E 0784 350F 5034 DC XL2'0784' 18 LE. LOAD I/O REG TO XMIT AGAIN
3510 501A 3511 5035 DC XL2'501A' 19 BOS.0 DELAY 1 CYCLE
3512 0784 3513 5036 DC XL2'0784' 1A LE. FORM XMIT WD RDY ON
3514 501B 3515 5037 DC XL2'501B' 1B BOS.0 HANG. END OF PHASE 1
5038 *
5039 *
5040 *
5041 *
3516 40E1 3517 5042 DC XL2'40E1' 1C TSN.0 XMIT WD RDY MUST NOT BE ON
3518 41E2 3519 5043 DC XL2'41E2' 1D TSN.1 REC WD RDY MUST NOT BE ON
351A 4EE3 351B 5044 DC XL2'4EE3' 1E TSN.E DATA LOOP MUST NOT BE ON
351C 4BE4 351D 5045 DC XL2'4BE4' 1F TSN.B REC. CHK MUST NOT BE ON
351E 4DE5 351F 5046 DC XL2'4DE5' 20 TSN.0 INT. REQ. MUST NOT BE ON
3520 1008 3521 5047 DC XL2'1008' 21 SSF.0 RESET BITS 2,3,13 OF I/O REG
3522 1204 3523 5048 DC XL2'1204' 22 SSN.2 SET BIT 2 OF I/O REG
3524 1304 3525 5049 DC XL2'1304' 23 SSN.3 SET BIT 3 OF I/O REG
3526 1E04 3527 5050 DC XL2'1E04' 24 SSN.E SET INSIDE WRAP ON
3528 0784 3529 5051 DC XL2'0784' 25 LE. LOAD I/O REG & XMIT WD
352A 7680 352B 5052 DC XL2'7680' 26 IC. SET HDB 6 = 80 FOR DELAY
352C 1640 352D 5053 DC XL2'1640' 27 SL. SHIFT HDB 6 LEFT
352E F610 352F 5054 DC XL2'F610' 28 TBN. TEST HDB 6 FOR END OF DELAY
3530 9027 3531 5055 DC XL2'9027' 29 LOOP BACK TIL 16 CYCLE DELAY OVER
3532 41E6 3533 5056 DC XL2'41E6' 2A TSN.1 REC. WD RDY MUST NOT BE ON
3534 1704 3535 5057 DC XL2'1704' 2B SSN.7 RESET CURAR TC ZERO
3536 7001 3537 5058 DC XL2'7001' 2C IC. SET MBAR HI = 01
3538 7122 3539 5059 DC XL2'7122' 2D IC. SET MBAR LO = 22
3539 7122 353B 5060 DC XL2'7122' 2E SSN.F TURN DIAG. MODE BACK ON
353A 1F04 353D 5061 DC XL2'1F04' 2F LE. LOAD I/O REG & XMIT
353C 0784 353F 5062 DC XL2'0784' 30 TSN. 1 WAIT FOR REC. WD RDY ON
353E 4132 3541 5063 DC XL2'4132' 31 BOS.0 LOOP BACK TO PREV. WD
3540 5030 3542 5064 DC XL2'5030' 32 IC. SET MBAR HI = 0
3542 7000 3543 5065 DC XL2'7000' 33 IC. SET MBAR LO = 0
3544 7100 3544 5065 DC XL2'7100' 34 BOS.1 MUST BRANCH
3546 5436 3547 5066 DC XL2'5436' 35 BOS.0 ERROR, HANG
3548 5035 3549 5067 DC XL2'5035' 36 HANG, END OF TEST
354A 5036 354B 5068 DC XL2'5036' 37 LR.MOVE HDB 10 TO 02
354C 2210 354D 5069 DC XL2'2210' 38 IC.SET HDB 09 TO 00
354E 7900 354F 5070 DC XL2'7900' 39 DESELECT DR/REC
354F 7900 3551 5071 DC XL2'7900' 3A DESELECT DR/REC
3550 0889 3553 5072 DC XL2'0889' 3B DESELECT DR/REC
3552 0C89 3555 5073 DC XL2'0C89' 3C DESELECT DR/REC
3554 0D89 3557 5074 DC XL2'0D89' 3D BOS.0 RETURN TO ADD.01
3556 0E89 3559 5075 R29MCE DC XL2'5001'
3558 5001 5076
5077 *****
5078 * ROUTINES 33,34,35 SPARE.
5079 *****
355A 33 355A 5080 RT33 DC XL1'33'
355B 00 355B 5081 DC XL1'00'
355C 3568 355D 5082 DC AL2(RT34)
355E 0C 01 3556 35 355E 5083 MVC SPARUT(2),DEC33
3564 C0 87 3584 5084 B SPAREX
5085 *
3568 34 3568 5086 RT34 DC XL1'34'
3569 00 3569 5087 DC XL1'00'
356A 3576 356B 5088 DC AL2(RT35)
356C 0C 01 3596 35 356C 5089 MVC SPARUT(2),DEC34
3572 C0 87 3584 5090 B SPAREX
5091 *
3576 35 3576 5092 RT35 DC XL1'35'
3577 00 3577 5093 DC XL1'00'
3578 35A4 3579 5094 DC AL2(RT36)
357A 0C 01 3596 35 357A 5095 MVC SPARUT(2),DEC35
3580 C0 87 3584 5096 B SPAREX

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8912 DISPLAY ADAPTER TEST

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
3584 C0 87 021A          5097 *
3588 01                  5098 SPAREX B      PRINT
3589 0E                  3588 5099          DC      XL1'01'
358A 359D                3589 5100          DC      IL1'14'
358C C0 87 0216          358B 5101          DC      AL2(SPARMS)
3590 D9D6E4E340E7E740  5102              B      LINK
3598 E2C7C1D9C54B          5103 *
3599 5104 SPARMS DC      CL14*ROUT XX SPARE.*
3596 5105 SPARUT EQU     SPARMS-7
359F 5106 DEC33 DC      CL2'33'
35A0 F3F4                35A1 5107 DEC34 DC      CL2'34'
35A2 F3F5                35A3 5108 DEC35 DC      CL2'35'
35A4 36                  5109
35A5 00                  5110 *****
35A6 3612                5111 * ROUTINE 36 SIO IMMEDIATE TO ENABLE/DISABLE BSCA *
35A8 C0 87 021A          5112 *****
35AC 01                  5113 * MICRO INSURES BSCA NOT ENABLED. *
35AD 22                  5114 * MACRO ENABLES BSCA. *
35AE 35D5                5115 * MICRO INSURES BSCA NOW ENABLED. *
35B0 C0 87 35D6          5116 * MACRO DISABLES BSCA. *
35B4 D9D6E4E340F3F440  5117 * MICRO INSURES BSCA DISABLED. *
35BC C2E2C3C140E2C5D6  5118 *****
35C4 40C9D4D4C5C45E40  35A4 5119 RT36 DC      XL1'36'          ROUTINE NUMBER
35CC C5D5C1C261C4CE2  35A5 5120          DC      XL1'00'          NO MANUAL INTERVENTION
35D4 C1C2                35A7 5121          DC      AL2(RT37)        ADDR OF NEXT ROUTINE
35D6 C0 87 5918          5122 *
35DA 83                  5123              B      PRINT          PRINT ROUTINE TITLE
35DB 3604                35AC 5124          DC      XL1'01'
35DD 3611                35AD 5125          DC      IL1'34'
35DF C0 87 54FE          35AF 5126          DC      AL2(R35HDR)
35E3 35                  5127              B      RT35GO
35E4 5001                35D5 5128 R35HDR DC      CL34*ROUT 36 BSCA SIO IMMED: ENAB/DISAB*
35E6 F3 58 E0           5128
35E9 F3 88 C0           5128
35EC C0 87 54FE          5128
35F0 36                  5128
35F1 5004                5129 RT35GO B      LOADCS          LOAD MICROPROGRAM
35F3 F3 58 E0           35DA 5130          DC      XL1'83'
35F6 F3 88 80           35DC 5131          DC      AL2(R35MCS)
35F9 C0 87 54FE          35DE 5132          DC      AL2(R35MCE)
35FD 37                  5133              B      DOMICR          DO MICROPROGRAM
35FE 5006                35E3 5134          DC      XL1'35'          ERR. HALT
3600 C0 87 0216          35E5 5135          DC      XL2'5001'        EXPECTED RESULTS
3604 4700                5136          SIO  X'E0'.SIOI        SIO ENABLE MC
3606 5001                5137          SIO  X'C0'.X'88'      SIO ENABLE BSCA
3608 4704                5138              B      DOMICR          DO MICROPROGRAM 2ND TIME
360A 5002                35F0 5139          DC      XL1'36'          ERROR HALT
360C 5004                35F2 5140          DC      XL2'5004'        EXPECTED RESULTS
360E 4705                5141          SIO  X'E0'.SIOI        ENABLE M*
3610 5006                5142          SIO  X'80'.X'88'      SIO DISABLE BSCA
3612 5008                5143              B      DOMICR          DO MICROPROGRAM 3RD TIME
3614 5010                35FD 5144          DC      XL1'37'          ERR. HALT
3616 5012                35FF 5145          DC      XL2'5006'        EXPECTED RESULTS
3618 5014                5146              B      LINK          GO TO NEXT ROUTINE.
3620 5016                5147 *
3622 5018                5148 *-----*
3624 5020                5149 * START OF MICROPROGRAM LISTING *
3626 5022                5150 *-----*
3628 5024                3604 5151 R35MCS EQU *
3630 5026                3605 5152          DC      XL2'4700' 000 TSN.7 BR TO SELF IF BSCA ENAB.
3632 5028                3607 5153          DC      XL2'5001' 001 BOS.0 EXPECTED RESULTS
3634 5030                3609 5154          DC      XL2'4704' 002 TSN.7 BR TO ADDR 004 IF BSCA ENAB.
3636 5032                360B 5155          DC      XL2'5002' 003 BOS.0 LOOP BACK TO ADDR 002 WAITING
3638 5034                5156 * FOR BSCA TO BE ENABLED.
3640 5036                360D 5157          DC      XL2'5004' 004 BOS.0 SECOND EXPECTED RESULTS
3642 5038                360F 5158          DC      XL2'4705' 005 TSN.7 BR TO SELF WAITING FOR
3644 5040                5159 * BSCA TO BE DISABLED.

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ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
3610 5006                3611 5160 R35MCE DC      XL2'5006' 006 BOS.0 THIRD EXPECTED RESULTS

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8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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5162 *****
5163 * ROUTINE 37 SIO IMMED. ENAB BSCA W/2-SEC TIMEOUT REQUEST.
5164 *****
5165 * 1.MICRO INSURES BSCA NOT ENABLED AND NO 2-SEC T.O. REQUEST
5166 * MACRO ENABLES BSCA
5167 * 2.MICRO INSURES BSCA IS ENAB. BUT NO 2-SEC T.O. REQUEST
5168 * MACRO TURNS ON 2-SEC T.O. REQUEST
5169 * 3.MICRO INSURES 2-SEC T.O. REQUEST IS ON
5170 * MACRO RESETS 2-SEC T.O. WITH TIMEOUT CANCEL COMMAND
5171 * 4.MICRO INSURES BSCA IS STILL ENABLED BUT NO 2-SEC T.O. REQUEST
5172 * MACRO SETS 2-SEC T.O. REQUEST AGAIN
5173 * 5.MICRO INSURES 2-SEC T.O. REQUEST IS ON.
5174 * MACRO DISABLES BSCA
5175 * 6.MICRO INSURES BSCA DISABLED AND 2-SEC T.O. REQUEST RESET
5176 *****
3612 37 3612 5177 RT37 DC XL1'37' ROUTINE NUMBER
3613 00 3613 5178 DC XL1'00' NO MANUAL INTERVENTION
3614 36DF 3615 5179 DC AL2(RT38) ADDRESS OF NEXT ROUTINE
5180 *
3616 C0 87 021A 5181 B PRINT PRINT ROUTINE TITLE
361A 01 361A 5182 DC XL1'01'
361B 2D 361B 5183 DC IL1'45'
361C 364E 361D 5184 DC AL2(R36HDR)
361E C0 87 364F 5185 B RT36GD
3622 09D6E4E340F3F 740 364E 5186 R36HDC CL45'ROUT 37 BSCA SIO IMMED; ENAB/DISAB W/T.O. REQ
362A C2E2C3C140E2C5D6 5186
3632 40C9D4D4C5C45E40 5186
363A C5D5C1C261C4C5E2 5186
3642 C1C240E661E34 ID6 5186
364A 4840D9C5D8 5186
364F C0 87 5918 5187 RT36GD B LOADCS LOAD MICROPROGRAM
3653 83 3653 5188 DC XL1'83'
3654 36A7 3655 5189 DC AL2(R36MCS)
3656 36DE 3657 5190 DC AL2(R36MCE)
3658 C0 87 54FE 5191 B DD 1ST MICROPROGRAM
365C 36 365C 5192 DC XL1'36' ERR. HALT
365D 5002 365E 5193 DC XL2'5002' 1ST EXPECTED RESULTS
365F F3 58 E0 5194 SIO X'E0'.S10I ENABLE MC
3662 F3 88 C0 5195 SIO X'C0'.X'88' ENABLE BSCA
3665 F3 58 04 5196 SIO X'04'.S10I
3668 C0 87 54FE 5197 B DD 2ND MICROPROGRAM
366C 37 366C 5198 DC XL1'37' ERR. HALT
366D 5008 366E 5199 DC XL2'5008' 2ND EXPECTED RESULTS
366F F3 58 E0 5200 SIO X'E0'.S10I ENABLE MC
3672 F3 88 04 5201 SIO X'04'.X'88' BSCA 2-SEC T.O. REQUEST
3675 C0 87 54FE 5202 B DD 3RD MICROPROGRAM
3679 38 3679 5203 DC XL1'38' ERR. HALT
367A 5008 367B 5204 DC XL2'5008' 3RD EXPECTED RESULTS
367C F3 58 E0 5205 SIO X'E0'.S10I ENABLE MC
367F F3 88 00 5206 SIO X'00'.X'88' BSCA 2-SEC T.O. CANCEL
3682 C0 87 54FE 5207 B DD 4TH MICROPROGRAM
3686 39 3686 5208 DC XL1'39' ERROR HALT
3687 5010 3688 5209 DC XL2'5010' 4TH EXPECTED RESULTS
3689 F3 58 E0 5210 SIO X'E0'.S10I ENABLE MC
368C F3 88 04 5211 SIO X'04'.X'88' BSCA 2-SEC T.O. REQ.
368F C0 87 54FE 5212 B DD 5TH MICROPROGRAM
3693 3A 3693 5213 DC XL1'3A' ERR. HALT
3694 5013 3695 5214 DC XL2'5013' 5TH EXPECTED RESULTS
3696 F3 58 E0 5215 SIO X'E0'.S10I ENABLE MC
3699 F3 88 80 5216 SIO X'80'.X'88' DISABLE BSCA
369C C0 87 54FE 5217 B DD 6TH MICROPROGRAM
36A0 38 36A0 5218 DC XL1'38' ERR. HALT
36A1 5016 36A2 5219 DC XL2'5016' 6TH EXPECTED RESULTS
36A3 C0 87 0216 5220 B LINK GO TO NEXT ROUTINE
5221 *
5222 *-----*
5223 * START OF MICROPROGRAM LISTING *
5224 *-----*

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8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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36A7 4700 36A7 5225 R36MCS EQU *
36A9 4601 36A8 5226 DC XL2'4700' 000 TSN.7 BR TO SELF IF BSCA ENAB.
36AB 5002 36AA 5227 DC XL2'4601' 001 TSN.6 BR TO SELF IF 2-SEC T.O. REQ ON.
36AD 4705 36AC 5228 DC XL2'5002' 002 BOS.0 1ST EXPECTED RESULTS
36AF 5003 36AE 5229 DC XL2'4705' 003 TSN.7 BR TO 005 WHEN BSCA ENAB.
36B1 5007 36B0 5230 DC XL2'5003' 004 BOS.0 TO ADDR 003. WAIT FOR BSCA ENAB.
36B3 5006 36B2 5231 DC XL2'5007' 005 BOS.0 TO ADDR 007.
36B5 4606 36B4 5232 DC XL2'5006' 006 BOS.0 ERROR. HANG
36B7 5008 36B6 5233 DC XL2'4606' 007 TSN.6 BR TO ADDR 006 IF 2-SEC T.O. REQ.
36B9 4619 36B8 5234 DC XL2'5008' 008 BOS.0 2ND EXPECTED RESULTS
36BB 5009 36BA 5235 DC XL2'4619' 009 TSN.6 BR TO ADDR 019 IF 2-SEC T.O. REQ.
36BD 5008 36BC 5236 DC XL2'5009' 00A BOS.0 TO ADDR 009. WAIT FOR T.O. REQ.
36BF 4717 36BE 5237 DC XL2'5008' 00B BOS.0 3RD EXPECTED RESULTS
36C1 500C 36C0 5238 DC XL2'4717' 00C TSN.7 BR TO 017 IF BSCA STILL ENAB.
36C3 500E 36C2 5239 DC XL2'500C' 00D BOS.0 TO ADDR 00C WAIT FOR BSCA ENAB.
36C5 460E 36C4 5240 DC XL2'500E' 00E BOS.0 ERROR. HANG
36C7 5010 36C6 5241 DC XL2'460E' 00F TSN.6 BR TO ADDR 00E IF 2-SEC T.O. REQ.
36C9 4613 36C8 5242 DC XL2'5010' 010 BOS.0 4TH EXPECTED RESULTS
36CB 5011 36CA 5243 DC XL2'4613' 011 TSN.6 BR TO ADDR 013 IF 2-SEC T.O. REQ.
36CD 5013 36CC 5244 DC XL2'5011' 012 BOS.0 TO ADDR 011. WAIT FOR T.O. REQ.
36CF 4614 36CE 5245 DC XL2'5013' 013 BOS.0 5TH EXPECTED RESULTS
36D1 4715 36CD 5246 DC XL2'4614' 014 TSN.6 BR TO SELF IF BSCA STILL ENAB.
36D3 5016 36DE 5247 DC XL2'4715' 015 TSN.7 BR TO SELF IF T.O. REQ STILL ON.
36D5 5018 36D4 5248 DC XL2'5016' 016 BOS.0 6TH EXPECTED RESULTS
36D7 500F 36D6 5249 DC XL2'5018' 017 BOS.0 TO ADDR 018 DUMMY CYCLE
36D9 1908 36D8 5250 DC XL2'500F' 018 BOS.0 TO ADDR 00F DUMMY CYCLE
36DB 4608 36DA 5251 DC XL2'1908' 019 SSF.9 SHOULD NOT RST T.O. REQ
36DD 501B 36DC 5252 DC XL2'4608' 01A TSN.6 BR TO ADDR 00B IF STILL T.O. REQ.
36DE 5253 R36MCS EQU * 01A BOS.0 ERROR HANG

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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5255 *****
5256 * ROUTINE 38 BSCA SIO NON-IMMEDIATE *****
5257 *****
5258 *
5259 * 1. MICRO.  INSURE NO SIO SVC REQ BSCA BUSY.
5260 *              ZERO OUT HDB 16,17,26,27.
5261 *
5262 * 1A MACRO  INSURE TIO BSCA NOT BUSY.
5263 *          ENABLE BSCA WITH A NON-IMMEDIATE SIO
5264 *          INSURE BSCA BUSY
5265 *
5266 * 2. MICRO  INSURE BSCA ENABLED.
5267 *          INSURE SIO SVC REQ BUSY IS ON.
5268 *          INSURE HDB 26,27 EQUAL IR, IQ.
5269 *          INSURE HDB 16,17 NOT CHANGED.
5270 *
5271 * 3. MICROC RESET BSCA BUSY
5272 *          INSURE BSCA BUSY IS RESET.
5273 *
5274 * 3A MACRO  INSURE TIO BSCA NOT BUSY
5275 *          ENABLE BSCA AGAIN WITH ANOTHER NON-IMMEDIATE SIO.
5276 *          INSURE TIO BSCA BUSY
5277 *          DISABLE BSCA
5278 *          INSURE BSCA NOT BUSY
5279 *          LIO HDB 16,17 EQUAL 0000
5280 *          LIO HDB 26,27 EQUAL 0000
5281 *          ISSUE BSCA SIO CONTROL ONLY
5282 *          INSURE BSCA NOT BUSY
5283 *          INSURE HDB 16,17 AND 26,27 STILL 0000
5284 *          ISSUE BSCA SIO NON-IMMEDIATE
5285 *          ISSUE 32XX SIO NON-IMMEDIATE
5286 *          SNS BACK 10,IR FROM BOTH COMMANDS AND CHECK
5287 *
5288 *****
360F 38          36DF 5289 RT38 DC XL1'38'          ROUTINE NO.
36E0 00          36E0 5290 DC XL1'00'          NO MANUAL INTERVENTION
36E1 3843        36E2 5291 DC AL2(RT39)          ADDR OF NEXT ROUTINE
                    5292
36E3 C0 87 021A 5293 B PRINT
36E7 01          36E7 5294 DC XL1'01'
36E8 28          36E8 5295 DC IL1'03'
36E9 3719        36EA 5296 DC AL2(R37HDB)
36EB C0 87 371A 5297 B RT37G0
36EF D9D6E4E340F3F 140 5298 R37HDB DC CL43'ROUT 38 BSCA SIO NON-IMMEDIATE AND TIO BUSY
36F7 C2E2C3C140E2C5D6 5298
J6FF 40D5D6D560C9D04 5298
3707 C5C4C9C1E3C54 CC1 5298
370F D5C440E3C9D64 CC2 5298
3717 E4E2E8 5298
371A C0 87 5918 5299 RT37G0 B LOADCS          GO LOAD MICROCODE
371E 83          371E 5300 DC XL1'83'
371F 3801        3720 5301 DC AL2(R37MCS)
3721 3842        3722 5302 DC AL2(R37MCE)
3723 C0 87 54FE 5303 B DOMICR
3727 37          3727 5304 DC XL1'37'          DO MICROCODE
3728 5006        3729 5305 DC XL2'5006'          ERROR HALT -37-
372A F3 58 E0 5306 SIO X'E0',SIOI          FIRST EXPECTED RESULTS
372D C1 8A 3743 5307 TIO BSYERR,X'8A'          ENABLE MC
3731 F3 88 C0 5308 SIO X'CO',X'88'          TIO BSCA BUSY. SHOULDNT BE.
3734 F3 8A C4 5309 SIO X'C4',X'8A'          ENABLE BSCA
3737 C1 8A 374B 5310 TIO R37MC2,X'8A'          SIO NON-IMMED
373B C0 87 5872 5311 B PRINTM          TIO BSCA BUSY. SHOULD BE.
373F 40          373F 5312 DC XL1'40'          ERROR HALT 40
3740 16          3740 5313 DC IL1'22'
3741 60F7        3742 5314 DC AL2(STATMB)
                    5315
3743 C0 87 5872 5316 BSYERR B PRINTM          ERROR HALT 41
3747 41          3747 5317 DC XL1'41'

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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3748 0F          3748 5318 DC IL1'15'
3749 60C2        374A 5319 DC AL2(STATMS)
                    5320
3748 C0 87 54FE 5321 R37MC2 B DOMICR          DO 2ND MICROPROGRAM
374F 38          374F 5322 DC XL1'38'          ERROR HALT -38-
3750 5018        3751 5323 DC XL2'5018'          EXPECTED RESULTS
3752 C0 87 54FE 5324 B DOMICR          DO 3RD MICROPROGRAM
3756 39          3756 5325 DC XL1'39'          ERR HALT
3757 5020        3758 5326 DC XL2'5020'          EXPECTED RESULTS
3759 F3 58 E0 5327 SIO X'E0',SIOI          ENABLE MC
375C C1 8A 3772 5328 TIO BSYERR,X'8A'          TIO BSCA BUSY. SHOULDNT BE
3760 F3 88 C0 5329 SIO X'CO',X'88'          ENABLE BSCA
3763 F3 8A C4 5330 SIO X'C4',X'8A'          SIO NON-IMMED
3766 C1 8A 377C 5331 TIO R37NS1,X'8A'          TIO BSCA BUSY. SHOULD BE
376A C0 87 5872 5332 B PRINTM          ERROR HALT 42
376E 42          376E 5333 DC XL1'42'
376F 16          376F 5334 DC IL1'22'
3770 60F7        3771 5335 DC AL2(STATMB)
                    5336 BSYERR B PRINTM          ERROR HALT 49
3772 C0 87 5872 5337 DC XL1'49'
3776 49          3776 5337 DC IL1'15'
3777 0F          3777 5338 DC AL2(STATMS)
3778 60C2        3779 5339 DC XL2'00'
377A 0000        377B 5340 SNSIT DC X'80',X'88'          SENSE HDB'S HERE.
377C F3 88 80 5341 R37NS1 SIO DISERR,X'8A'          DISABLE BSCA
377F C1 8A 37D9 5342 TIO ZERO,HDB3          TIO BSCA BUSY. SHOULDNT BE
3783 31 48 0D62 5343 LIO HDB 16,17 SET TO ZERO
3787 F3 58 80 5344 SIO X'80',SICI          DISABLE MC
378A 31 88 0D62 5345 LIO ZERO,X'88'          HDB 26,27 SET TO ZERO
378E F3 58 E0 5346 SIO X'E0',SIOI          ENABLE MC
3791 F3 88 04 5347 TIO X'0A',X'88'          SIO BSCA CTL ONLY NO-OP.
3794 C1 8A 37F9 5348 TIO R37H48,X'8A'          TIO BSCA BUSY. SHLD NOT BE
3798 30 48 3778 5349 SNS SNSIT,HDB3          SNS HDB'S 16,17
379C 0D 01 3778 0D62 5350 CLC SNSIT(2),ZERO
37A2 C0 01 37E1 5351 BNE HDBER1
37A6 F3 58 80 5352 SIO X'80',SICI          DISABLE MC
37A9 30 88 3778 5353 SNS SNSIT,X'88'          SNS HDB'S 26,27
37AD F3 58 E0 5354 SIO X'E0',SICI          ENABLE MC
37B0 0D 01 3778 0D62 5355 CLC SNSIT(2),ZERO
37B6 C0 01 37E9 5356 BNE HDBER2
37BA F3 88 C0 5357 SIO X'CO',X'88'          ENABLE BSCA
37BD F3 8A C0 5358 SIO X'CO',X'8A'          SIO NON-IMMED
37C0 F3 58 80 5359 SIO X'80',SICI          DISABLE MC
37C3 30 88 3778 5360 SNS SNSIT,X'88'          SNS HDB'S 26,27
37C7 F3 58 E0 5361 SIO X'E0',SIOI          ENABLE MC
37CA 3D 8A 3778 5362 CLI SNSIT,X'8A'          DID IQ OF '8A' GET TO HDB 27?
37CE C0 01 37F1 5363 BNE R37E47          BR IF NOT
37D2 F3 58 80 5364 SIO X'80',SIOI          DISABLE RESET
37D5 C0 87 0216 5365 B BR TO NEXT ROUTINE
                    5366
37D9 C0 87 5872 5367 DISERR B PRINTM          ERROR HALT 43
37DD 43          37DD 5368 DC XL1'43'
37DE 0F          37DE 5369 DC IL1'15'
37DF 60C2        37E0 5370 DC AL2(STATMS)
                    5371
37E1 C0 87 5872 5372 HDBER1 B PRINTM          ERROR HALT 44
37E5 44          37E5 5373 DC XL1'44'
37E6 16          37E6 5374 DC IL1'22'
37E7 6176        37E6 5375 DC AL2(STATB3)
                    5376
37E9 C0 87 5872 5377 HDBER2 B PRINTM          ERROR HALT 45
37ED 45          37ED 5378 DC XL1'45'
37EE 16          37EE 5379 DC IL1'22'
37EF 6176        37F0 5380 DC AL2(STATB3)
                    5381
37F1 C0 87 5872 5382 R37E47 B PRINTM          ERROR HALT 47
37F5 47          37F5 5383 DC XL1'47'
37F6 16          37F6 5384 DC IL1'22'
37F7 6176        37F8 5385 DC AL2(STATB3)

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
38B7	F3 88 02	5495	SIO	X'02',X'88'
38BA	C0 87 38BE	5496	B	NXT38
38BE	3D 02 394C	5497	NXT38	CLI INTFLG,X'02'
38C2	C0 01 3924	5498	BNE	R38E43
38C6	F3 58 E0	5499	SIO	X'E0',SIOI
38C9	F3 88 C0	5500	SIO	X'C0',X'88'
5501 * START MICRO-2				
38CC	C0 87 54FE	5502	B	COMICR
38D0	45	38D0 5503	DC	XL1'45'
38D1	5003	38D2 5504	DC	XL2'5003'
5505 * START MACRO-3				
38D3	F3 58 E0	5506	SIO	X'E0',SIOI
38D6	C1 8C 38E2	5507	TIO	HAVINT,X'8C'
38DA	C0 87 5872	5508	B	PRINTM
38DE	44	38DE 5509	DC	XL1'44'
38DF	1F	38DF 5510	DC	IL1'31'
38E0	60E1	38E1 5511	DC	AL2(STATM)
5512				
38E2	F3 88 80	5513	HAVINT SIO	X'80',X'88'
38E5	C1 8C 3932	5514	TIO	R38E40,X'8C'
38E9	F3 58 80	5515	SIO	X'80',SIOI
5516 * START MACRO-4				
38EC	C0 87 5918	5517	B	LOADCS
38F0	01	38F0 5518	DC	XL1'01'
38F1	F3 58 84	5519	SIO	X'84',SIOI
38F4	31 59 508D	5520	LIO	X2205,OPDEC
38F8	F3 58 80	5521	SIO	X'80',SIOI
38FB	F3 58 E0	5522	SIO	X'E0',SIOI
38FE	3C 01 394C	5523	MVI	INTFLG,X'01'
3902	35 A0 3948	5524	L	INT38A,IAR2
3906	F3 88 C2	5525	SIO	X'C2',X'88'
3909	C0 87 390D	5526	B	NXT111
390D	3D 02 394C	5527	NXT111	CLI INTFLG,X'02'
3911	C0 01 3942	5528	BNE	R38E48
3915	F3 58 80	5529	SIO	X'80',SIOI
3918	C0 87 0216	5530	B	LINK
5531				
391C	C0 87 5872	5532	R38E42	B PRINTM
3920	42	3920 5533	DC	XL1'42'
3921	11	3921 5534	DC	IL1'17'
3922	6087	3923 5535	DC	AL2(STATM6)
5536				
3924	0C 01 3990 39AE	5537	R38E43	MVC RICIC(2),WORDND
392A	C0 87 5872	5538	B	PRINTM
392E	43	392E 5539	DC	XL1'43'
392F	18	392F 5540	DC	IL1'24'
3930	39A6	3931 5541	DC	AL2(RICM1)
3932	C0 87 5872	5542	R38E40	B PRINTM
3936	40	3936 5543	DC	XL1'40'
3937	11	3937 5544	DC	IL1'17'
3938	6087	3939 5545	DC	AL2(STATM6)
5546				
393A	C0 87 5872	5547	R38E41	B PRINTM
393E	41	393E 5548	DC	XL1'41'
393F	11	393F 5549	DC	IL1'17'
3940	6087	3941 5550	DC	AL2(STATM6)
5551				
3942	C0 87 5872	5552	R38E48	B PRINTM
3946	48	3946 5553	DC	XL1'48'
3947	12	3947 5554	DC	IL1'18'
3948	6190	3949 5555	DC	AL2(STAT85)
5556				
5557 *****				
5558 * ROUTINE 39 INTERRUPT SUBROUTINE *				
5559 *****				
394A	394D	3948 5560	INT38A	DC AL2(INT38)
394C	00	394C 5561	INTFLG	DC XL1'00'
5562 *				

ENAELE BSCA INTERRUPTS  
DUMMY OP  
DID INT OCCUR?  
BR IF NOT  
ENABLE MC  
DISABLE BSCA INT., ENABLE BSCA

DO 2 ND MICRO  
ERROR HALT -45-  
2ND EXPECTED RESULTS

ENABLE MC  
BSCA INT SHOULD BE PENDING  
ERROR HALT 44

DISABLE BSCA W/O INT RESET  
BSCA INT. SHOULD NOT BE PENDING  
DISABLE RESET 32XX

GO PUT BCS-TO-ADDR  
IN FIRST 256 WORDS  
SET DIAG-2 LATCH  
LOAD OP-DEC WITH BAD PARITY  
DISABLE RESET, ENABLE MC.  
ATTACH CK SHOULD OCCUR  
SET INT-EXPECTED FLAG BIT  
LOAD INT LVL-2 IAR  
ENABLE BSCA INT  
DUMMY OP  
DID INT OCCUR?  
BR IF NOT  
DISABLE RESET  
BR TO NEXT ROUTINE

ERROR HALT 42

\*BSCA OP-END INT PENDING\*

ERROR HALT 43

ERR HALT 40

ERR HALT 41

ERR HALT 48

ADDRESS FOR INT LVL-2 IAR  
INTERRUPT FLAG  
00=ND INT EXPECTED

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
394D	3D 01 394C	5563	*	
3951	C0 81 3964	5564	*	
3955	35 20 398A	5565	INT38	CLI INTFLG,X'01'
3959	F3 88 01	5566	BE	INTEX1
395C	C0 87 5872	5567	L	AEM39,P1IAR
3960	39	5568	SIO	X'01',X'88'
3961	0F	5569	EH39	B PRINTM
3962	613E	3960 5570	DC	XL1'39'
3961 5571				
3963 5572				
5573				
3964	3C 02 394C	5574	INTEX1	MVI INTFLG,X'02'
3968	F3 88 01	5575	SIO	X'01',X'88'
3968	3D 01 394C	5576	CLI	INTFLG,X'01'
396F	C0 81 3982	5577	BE	INTEX2
3973	35 20 398C	5578	L	AEM3C,P1IAR
3977	F3 88 01	5579	SIO	X'01',X'88'
397A	C0 87 5872	5580	EH3C	B PRINTM
397E	3C	397E 5581	DC	XL1'3C'
397F	0F	397F 5582	DC	IL1'15'
3980	613E	3981 5583	DC	AL2(STAT80)
5584				
3982	F3 88 01	5585	INTEX2	SIO X'01',X'88'
3985	C0 87 394D	5586	B	INT38
3989	395C	398A 5587	AEM39	DC AL2(EH39)
3988	397A	398C 5588	AEM3C	DC AL2(EH3C)
5589				
398D	D5F0	398E 5590	WORDND	DC CL2'N0'
398F	C3C3	3990 5591	RICIC	DC CL2'CC'
3991	C9D5E3C5D9D9E 4D7	39A6 5592	RICM1	DC CL22*INTERRUPTS TOOK PLACE*
3999	E3E240E'D6D6D 440	5592		
39A1	D7D3C1C3C540	5592		
5593 *-----*				
5594 * START OF MICROPROGRAM LISTING *				
5595 *-----*				
39A7	4702	39A7 5596	R38MCS	EQU *
39A9	5000	39A0 5597	DC	XL2'4702'
39AB	1404	39AA 5598	DC	XL2'5000'
39AD	5003	39AC 5599	DC	XL2'1404'
39AF	1404	39AE 5600	DC	XL2'5003'
39B1	5005	39B0 5601	DC	XL2'1404'
39B2	5602	39B2 5602	R38MCE	DC XL2'5005'

O1=INT EXPECTED  
O2=INT OCCURRED  
INT IEXPECTED?

RESET INT  
ERROR HALT 39

SET \*INT CCURRED\* IN FLAG BYTE  
RESET PENDING BSCA INT  
INT EXPECTEC?

RESET INT  
ERROR HALT 3C

RESET PENDING BSCA INT

TSN.7 BSCA ENABLED  
BOS.0  
SET INT ON  
HANG  
SSN.4 SET INT AGAIN  
HANG AGAIN

8912 DISPLAY ADAPTER TEST

8912 DISPLAY ADAPTER TEST

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
5604	*	*****		*****
5605	*	ROUTINE 3A	BSCA TIO NOT RDY/UNIT CK	
5606	*	*****		*****
5607	*			
5608	*	MACRO	ENALE MC	
5609	*		DISABLE BSCA	
5610	*		TIO SHOULD BE NOT RDY/UNIT CK	
5611	*		ENABLE BSCA	
5612	*		TIO SHOULD NOT BE NOT RDY/UNIT CK	
5613	*		DISABLE BSCA	
5614	*		TIO SHOULD BE NOT RDY/UNIT CK	
5615	*		ENABLE BSCA	
5616	*			
5617	*	MICRO	SET UNIT CHECK	
5618	*			
5619	*	MACRO	TIO SHOULD BE NOT RDY/UNIT CK	
5620	*		SIO NON IMMEDIATE TO BSCA	
5621	*		TIO SHOULD NOT BE NOT RDY/UNIT CK	
5622	*			
5623	*	*****		*****
3983	3A	3983	5624	RT3A DC XL1'3A' ROUTINE NO.
3984	00	3984	5625	DC XL1'00' ADDR OF NEXT ROUTINE
3985	3AA9	3986	5626	DC AL2(RT3B) PRINT ROUTINE HEADER
			5627	
3987	C0 87 021A		5628	B PRINT
3988	01	3988	5629	DC XL1'01'
398C	23	398C	5630	DC IL1'35'
398D	39E5	398E	5631	DC AL2(R39HDR)
39BF	C0 87 39E6		5632	B R39GD
39C3	D9D6E4E340F3C140	39E5	5633	R39HDR DC Q135'ROUT 3A BSCA TIO NOT RDY/UNIT CHECK'
39CB	C2E2C3C140E3C0D6		5633	
39D3	40D5D6E340D9C4E8		5633	
39DB	61E4D5C9E340C3C8		5633	
39E3	C5C3D2		5633	
39E6	F3 58 80		5634	R39GD SIO X'80'.SIOI DISABLE RESET. 32XX
39E9	C0 87 5918		5635	B LOADCS LOAD MICROCODE
39ED	83	39ED	5636	DC XL1'83'
39EE	3A93	39EF	5637	DC AL2(R39MCS) START ADDRESS
39F0	3AAB	39F1	5638	DC AL2(R39MCE) END ADDRESS
39F2	F3 58 E0		5639	SIO X'E0'.SIOI ENABLE MC
39F5	C1 88 3A01		5640	TIO R39S1.X'88' BSCA NR/UC. SHOULD BRANCH
39F9	C0 87 5872		5641	B PRINTM ERROR HALT 39
39FD	39	39FD	5642	DC XL1'39'
39FE	13	39FE	5643	DC IL1'19'
39FF	6160	3A00	5644	DC AL2(STATB2)
3A01	F3 88 C0		5645	R39S1 SIO X'CO'.X'88' ENABLE BSCA
3A04	38 20 0A0E		5646	TBN UDT3-1.X'20' IS BSCA-1 INSTALLED
3A08	C0 90 3A10		5647	BF R39T1 BR IF NOT
3A0C	C1 88 3A10		5648	TIO R39T1.X'80' TIO U.C. TO BSCA-1
3A10	C1 88 3A83		5649	R39T1 TIO R39E3A.X'88' BSCA NR/UC. SHOULDNT BRANCH
3A14	F3 88 80		5650	SIO X'80'.X'88' DISABLE BSCA
3A17	C1 88 3A23		5651	TIO R39S2.X'88' BSCA NR/UC. SHOULD BRANCH
3A18	C0 87 5872		5652	B PRINTM ERROR HALT 41
3A1F	41	3A1F	5653	DC XL1'41'
3A20	13	3A20	5654	DC IL1'19'
3A21	6160	3A22	5655	DC AL2(STATB2)
			5656	
3A23	F3 58 E0		5657	R39S2 SIO X'E0'.SIOI ENABLE MC
3A26	F3 88 C0		5658	SIO X'CO'.X'88' ENABLE BSCA
3A29	C0 87 54FE		5659	B DOMICR
3A2D	42	3A2D	5660	DC XL1'42' HALT -42-
3A2E	5004	3A2F	5661	DC XL2'5004' 1ST EXPECTED RESULT
3A30	F3 58 E0		5662	SIO X'E0'.SIOI ENABLE MC
3A33	C0 87 54FE		5663	B DOMICR
3A37	43	3A37	5664	DC XL1'43' HALT -43-
3A38	5006	3A39	5665	DC XL2'5006' 2ND EXPECTED RESULT
3A3A	F3 58 E0		5666	SIO X'E0'.SIOI ENABLE MC
3A3D	F3 88 C0		5667	SIO X'CO'.X'88' ENABLE BSCA

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
3A40	38 20 0A0E		5668	TBN UDT3-1.X'20'
3A44	C0 90 3A4C		5669	BF R39S4
3A48	C1 80 3A4C		5670	TIO R39S4.X'80'
3A4C	C1 88 3A58		5671	R39S4 TIO R39S3.X'88'
3A50	C0 87 5872		5672	B PRINTM
3A54	3C	3A54	5673	DC XL1'3C'
3A55	13	3A55	5674	DC IL1'19'
3A56	6160	3A57	5675	DC AL2(STATB2)
			5676	
3A58	C1 88 3A68		5677	R39S3 TIO R39S3A.X'88'
3A5C	C0 87 5872		5678	B PRINTM
3A60	49	3A60	5679	DC XL1'49'
3A61	13	3A61	5680	DC IL1'19'
3A62	6160	3A63	5681	DC AL2(STATE2)
3A64	C0 87 0216		5682	B LINK
3A68	C0 87 54FE		5683	R39S3A B DOMICR
3A6C	45	3A6C	5684	DC XL1'45'
3A6D	500A	3A6E	5685	DC XL2'500A'
3A6F	F3 58 E0		5686	SIO X'E0'.SIOI ENABLE MC
3A72	F3 88 C0		5687	SIO X'CO'.X'88' ENABLE BSCA
3A75	F3 8A 00		5688	SIO X'00'.X'8A' BSCA SIO NON IMMEDIATE TO RST UC
3A78	C1 88 3A8B		5689	TIO R39E3D.X'88' BSCA NR/UC. SHOULD NOT BRANCH
3A7C	F3 58 80		5690	SIO X'80'.SICI DISABLE RESET 32XX
3A7F	C0 87 0216		5691	B LINK BR TO NEXT ROUTINE
			5692	
3A83	C0 87 5872		5693	R39E3A B PRINTM ERROR HALT 3A
3A87	3A	3A87	5694	DC XL1'3A'
3A88	0F	3A88	5695	DC IL1'15'
3A89	614D	3A8A	5696	DC AL2(STATB1)
			5697	
3A8B	C0 87 5872		5698	R39E3D B PRINTM ERROR HALT 44
3A8F	44	3A8F	5699	DC XL1'44'
3A90	0F	3A90	5700	DC IL1'15'
3A91	614D	3A92	5701	DC AL2(STATE1)
			5702	
			5703	
			5704	*****
			5705	* START OF MICROPROGRAM LISTING *
			5706	*****
3A93	73FF	3A93	5707	R39MCS EQU *
3A95	2FA3	3A94	5708	DC XL2'73FF' 000 PUT 'FF' IN HDB 3
3A97	4704	3A96	5709	DC XL2'2FA3' 001 MOVE IT TO HDB 3F
3A99	5002	3A98	5710	DC XL2'4704' 002 BSCA ENABLED
3A9B	5004	3A9A	5711	DC XL2'5002' 003 WAIT & LOOP
3A9D	1104	3A9A	5712	DC XL2'5004' 004 1ST EXPECTED RESULT
3A9F	5006	3A9E	5713	DC XL2'1104' 005 SET U/C
3AA1	1104	3AA0	5714	DC XL2'5006' 006 2ND EXP RESULT
3AA3	8FA3	3AA2	5715	DC XL2'1104' 007 SET U/C
3AA5	900F	3AA4	5716	DC XL2'8FA3' 008 TEST HDB 3F STILL = HDB 3
3AA7	500A	3AA6	5717	DC XL2'900F' 009 BRANCH TO ERROR IF NOT
		3AA8	5718	R39MCE DC XL2'500A' 00A HANG 3RD EXP RESULT

IS BSCA-1 INSTALLED  
BR IF NOT  
TIO UC TO BSCA-1  
BSCA NR/UC. SHLD BRANCH. UNIT CK  
ERROR HALT 3C.

TIO NR/UC SHOULD BRANCH  
ERROR HALT 49

ERROR EXIT

ERROR HALT -45-  
3RD EXPECTED RESULTS  
ENABLE MC  
ENABLE BSCA  
BSCA SIO NON IMMEDIATE TO RST UC  
BSCA NR/UC. SHOULD NOT BRANCH  
DISABLE RESET 32XX  
BR TO NEXT ROUTINE

ERROR HALT 3A

ERROR HALT 44

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

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5720 *****
5721 * ROUTINE JB BSCA MODE CYCLE STEAL TEST *
5722 *****
5723 *
5724 * MACRO 1 CLEAR CYCLE STEAL AREA AND SET LAST BYTE = FF. *
5725 *
5726 * LOAD CRTAR *
5727 *
5728 * MICRO 1 TEST BSCA MODE CYCLE STEAL LATCH IS OFF *
5729 * SET BSCA MODE CYCLE STEAL MODE LATCH ON *
5730 * TEST FOR ON. SHOULD BE . *
5731 *
5732 * MACRO 2 ENABLE MC *
5733 * TEST BSCA BUSY-SHOULD NOT BE. *
5734 * ENABLE BSCA WITH NON-IMMEDIATE SIO. *
5735 * LOAD BSCA-2- CURRENT ADDR REG *
5736 * TEST BSCA BUSY SHOULD BE. *
5737 *
5738 * MICRO 2 TEST BSCA ENABLED. *
5739 * TEST BSCA MODE CS LATCH, SHOULD BE ON. *
5740 * DO 4 CYCLE STEAL OPERATIONS USING 'FFAASS28' DATA PATTERN *
5741 *
5742 * MACRO 3 COMPARE STORED DATA PATTERN. *
5743 * SNS CRTAR FOR SAME AS ORIGINAL. SHOULD BE THE SAME. *
5744 *
5745 * MICRO 3 DO 4 FETCH CYCLE STEALS AND COMPARES *
5746 *
5747 * MACRO 4 ENABLE MC *
5748 * DISABLE BSCA AND TIO BSCA BUSY. SHOULD NOT BE. *
5749 *
5750 * MICRO 4 TEST BSCA MODE CYCLE STEAL LATCH, SHOULD BE ON. *
5751 *
5752 * MACRO 5 DISABLE RESET *
5753 * BRANCH TO NEXT ROUTINE *
5754 *
5755 *****
3AA9 3B RT3B DC XL1'3B' ROUTINE NUMBER
3AAA 00 BC XL1'00' NO MANUAL INTERVENTION
3AAB 4000 DC AL2(RT3C) ADD OF NEXT ROUTINE

3AAD C2 01 3ADF 3ADF 5760 USING R3BG01,XR1
5761 LA R3BG01,XR1 INITIALIZE XR1 FOR INDEXING.
5762
5763 B PRINT
3AB5 5764 DC XL1'01'
3AB6 5765 DC XL1'34'
3AB7 3ADE DC AL2(R3BHDR)
3AB8 5766 DC R3BG01
3AB9 C0 87 3ADF 3ADE 5768 R3BHDR DC CL34'ROUT 3B BSCA MODE CYCLE STEAL TEST'
3ABD D9D6E4E340F3C140 3ADE 5768 R3BHDR DC
3AC5 C2E2C3C140D4DC4 5768
3ACD C540C3E8C3D3C140 5768
3AD5 E2E3C5C1D340E3C5 5768
3ADD E2E3 5768
3ADF C0 87 5918 5769 R3BG01 B LOADCS GO LOAD MICROCODE
3AE3 83 DC XL1'83'
3AE4 38BF DC AL2(R3BNCS)
3AE6 3C5A DC AL2(R3BNCE)
3AE7 5772 DC
5773
3AE8 5F 05 D8 D8 5774 SLC PASTCS(6,XR1),PASTCS(XR1) CLEAR OUT CYCLE STEAL AREA
3AEC 3C FF 38B9 5775 MVI BCYSTA,X'FF' SET LAST CYCLE STEAL BYTE =FF
3AF0 C0 87 54FE 5776 B COMICR DO MICROCODE
3AF4 3B DC XL1'3B' ERROR HALT -3B-
3AF5 5004 DC XL2'5004' FIRST EXPECTED RESULTS
3AF7 F3 58 E0 5779 SIO X'E0',SIO1 ENABLE MC
3AFA C1 8A 3B14 5780 TIO BSYER1,X'8A' TIO BSCA BUSY, SHOULD NOT BE
3AFE F3 88 C0 5781 SIO X'C0',X'88' ENABLE BSCA WITH SIO IMMEDIATE.
3B01 31 8C 388C 5782 LIO BCYSTL,BSDAR LOAD BSCA CURRENT ADDR REG
3B05 F3 8A C4 5783 SIO X'C4',X'8A' SIO NON-IMMEDIATE SET BUSY

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3B08 C1 8A 3B1C 5784 TIO R3BMC2,X'8A' TIO BSCA BUSY
3B0C C0 87 5B72 5785 B PRINTM ERROR HALT -3C-
3B10 3C 3B10 5786 DC XL1'3C'
3B11 16 3B11 5787 DC IL1'22'
3B12 60F7 3B13 5788 DC AL2(STATMB)
5789
3B14 C0 87 5B72 5790 BSYER1 B PRINTM ERROR HALT -3D-
3B18 3D 3B18 5791 DC XL1'3D'
3B19 0F 3B19 5792 DC IL1'15'
3B1A 60C2 3B18 5793 DC AL2(STATM9)
5794
3B1C C0 87 54FE 5795 R3BMC2 B DOMICR DO 2ND MICROPROGRAM (STORE CS)
3B20 3E 3B20 5796 DC XL1'3E' ERROR HALT -3E-
3B21 5021 3B22 5797 DC XL2'5021' EXPECTED RESULTS
5798
3B23 5D 01 57 DB 5799 CLC R3BEX1(2,XR1),BCYSTA-2(XR1) CHECK FIRST 2 BYTES.
3B27 F2 81 0D 5800 JE R3BB01 JUMP IF OKAY
3B2A 1C 01 5FE6 DB 5801 MVC STATAC,BCYSTA-2(2,XR1) PUT ERROR RESULTS IN STATUS
3B2F C0 87 5DA5 5802 B STATUS
3B33 20 3B33 5803 DC XL1'20' PRINT EXP & ACT RESULT
3B34 3F 3B34 5804 DC XL1'3F' ERROR HALT -3F-
3B35 FFAA 3B36 5805 R3BEX1 DC XL2'FFAA' EXPECTED RESULTS
5806
3B37 5D 01 6B DA 5807 R3BB01 CLC R3BEX2(2,XR1),BCYSTA(XR1) CHECK 2ND 2 BYTES
3B3B F2 81 0D 5808 JE R3BB02 JUMP IF OKAY
3B3E 1C 01 5FE6 DA 5809 MVC STATAC,BCYSTA(2,XR1) PUT ERROR RESULTS IN STATUS
3B43 C0 87 5DA5 5810 B STATUS
3B47 20 3B47 5811 DC XL1'20' PRINT EXP & ACT RESULTS
3B48 40 3B48 5812 DC XL1'40' ERROR HALT
3B49 5528 3B4A 5813 R3BEX2 DC XL2'5528' EXPECTED RESULT
5814
3B4B 7D 00 D6 5815 R3BB02 CLI PRBCS(XR1),X'00' FIRST BYTE OF 'B'CS AREA = 00
3B4E F2 01 06 5816 R3BB03 JNE R3BB03 JUMP IF NOT = EQUAL
3B51 7D 00 DB 5817 CLI PASTC:(XR1),X'00' LAST BYTE OF 'B'CS AREA = 00
3B54 F2 81 12 5818 JE R3BB05 JUMP AROUND ERROR
3B57 1C 00 5FE5 D6 5819 R3BB03 MVC STATAC-1,PRBCS(1,XR1) MOVE 1ST BYTE TO STATUS
3B5C 1C 00 5FE6 DB 5820 MVC STATAC,PASTCS(1,XR1) MOVE LAST BYTE TO STATUS
3B61 C0 87 5DA5 5821 B STATUS
3B65 20 3B65 5822 DC XL1'20'
3B66 41 3B66 5823 DC XL1'41' ERROR HALT -41-
3B67 0000 3B68 5824 DC XL2'0000' EXPECTED RESULTS
5825
3B69 F3 88 80 5826
3B6C C1 8A 3B86 5827 R3BB05 SIO X'80',X'88' DISABLE BSCA
3B70 F3 88 C0 5828 TIO BSSER2,X'8A' TIO BSCA BUSY SHOULD NOT BE
3B73 31 8C 3B8C 5829 SIO X'C0',X'88' ENABLE BSCA IMMEDIATE SIO
3B77 F3 8A C4 5830 LIO BCYSTL,BSDAR LOAD BSCA CURRENT ADDR REG
3B7A C1 8A 3B96 5831 SIO X'C4',X'8A' SIO NON IMMEDIATE SET BUSY
3B7E C0 87 5B72 5832 TIO R3BB06,X'8A' TIO BSCA BUSY - GO DO MICRO
3B82 44 5833 B PRINTM
3B83 16 3B82 5834 DC XL1'44' ERROR HALT -44-
3B84 60F7 3B83 5835 DC IL1'22'
3B86 C0 87 5B72 3B85 5836 DC AL2(STATMB)
3B8A 45 3B8A 5837 B BSSER2 B PRINTM
3B8B 0F 3B8B 5838 DC XL1'45' ERROR HALT -45-
3B8C 60C2 3B8B 5839 DC IL1'15'
3B8E C0 87 5B72 3B8D 5840 DC AL2(STATM9)
5841
3B92 46 5842 BSYER3 B PRINTM
3B93 0F 3B92 5843 DC XL1'46' ERROR HALT -46-
3B94 60C2 3B93 5844 DC IL1'15'
3B96 C0 87 54FE 3B95 5845 DC AL2(STATM9)
3B9A 42 5846 R3BB06 B DOMICR DO 3RD MICRO PROGRAM (FETCH CS)
3B9B 503E 3B9A 5847 DC XL1'42' ERROR HALT -42-
3B9D F3 58 E0 3B9C 5848 DC XL2'503E' EXPECTED RESULTS
3BA0 F3 88 80 5849 SIO X'E0',SIO1 ENABLE MC
3BA3 C1 8A 3B8E 5850 SIO X'80',X'88' DISABLE BSCA
5851 TIO BSYER3,X'8A' TIO BSCA BUSY SHOULD NOT BE

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
38A7	C0 87 54FE	5852	B	DOMICR
38AB	47	5853	DC	XL1'47'
38AC	504C	5854	DC	XL2'504C'
		5855		
38AE	F3 58 80	5856	SIO	X'80',SIOI
		5857		
38B1	C0 87 0216	5858	B	LIHK
38B5	00	5859	DC	XL1'00'
		5860	EQU	*
38B6	00000000	5861	DC	XL4'0'
38BA	00	5862	DC	XL1'0'
38BB	3886	5863	DC	AL2{BCYST}
38BD	0000	5864	DC	XL2'00'
		5865		*-----*
		5866		* START OF MICROPROGRAM LISTING *
		5867		*-----*
38BF	4500	5868	EQU	*
38C1	1504	5869	DC	XL2'4500'
38C3	4504	5870	DC	XL2'1504'
38C5	5003	5871	DC	XL2'4504'
38C7	5004	5872	DC	XL2'5003'
38C9	5807	5873	DC	XL2'5004'
38CB	5005	5874	DC	XL2'5807'
38CD	1504	5875	DC	XL2'5005'
38CF	450A	5876	DC	XL2'1504'
38D1	5009	5877	DC	XL2'450A'
38D3	500B	5878	DC	XL2'5009'
38D5	500C	5879	DC	XL2'500B'
38D7	500D	5880	DC	XL2'500C'
38D9	7FFF	5881	DC	XL2'500D'
38DB	1904	5882	DC	XL2'7FFF'
38DD	4811	5883	DC	XL2'1904'
38DF	5010	5884	DC	XL2'4811'
38E1	4811	5885	DC	XL2'5010'
38E3	7FAA	5886	DC	XL2'4811'
38E5	1904	5887	DC	XL2'7FAA'
38E7	4816	5888	DC	XL2'1904'
38E9	5015	5889	DC	XL2'4816'
38EB	4816	5890	DC	XL2'5015'
38ED	7F55	5891	DC	XL2'4816'
38EF	1904	5892	DC	XL2'7F55'
38F1	481B	5893	DC	XL2'1904'
38F3	501A	5894	DC	XL2'481B'
38F5	481B	5895	DC	XL2'501A'
38F7	7F28	5896	DC	XL2'481B'
38F9	1904	5897	DC	XL2'7F28'
38FB	4820	5898	DC	XL2'1904'
38FD	501F	5899	DC	XL2'4820'
38FF	4820	5900	DC	XL2'501F'
3C01	5021	5901	DC	XL2'4820'
		5902	DC	XL2'5021'
		5903		* THE NEXT PART IS ENTERED TO TEST FETCH CYCLE STEAL IN BSCA MODE.
3C03	5042	5904	DC	XL2'5042'
3C05	5024	5905	DC	XL2'5024'
3C07	5025	5906	DC	XL2'5025'
3C09	5026	5907	DC	XL2'5026'
3C0B	EFFF	5908	DC	XL2'EFFF'
3C0D	9C29	5909	DC	XL2'9C29'
3C0F	5028	5910	DC	XL2'5028'
3C11	1804	5911	DC	XL2'1804'
3C13	482C	5912	DC	XL2'482C'
3C15	5028	5913	DC	XL2'5028'
3C17	482C	5914	DC	XL2'482C'
3C19	EFAA	5915	DC	XL2'EFAA'
3C1B	9C30	5916	DC	XL2'9C30'
3C1D	502F	5917	DC	XL2'502F'
3C1F	1804	5918	DC	XL2'1804'
3C21	4833	5919	DC	XL2'4833'

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
3C23	5032	5920	DC	XL2'5032'
3C25	4833	5921	DC	XL2'4833'
3C27	EF55	5922	DC	XL2'EF55'
3C29	9C37	5923	DC	XL2'9C37'
3C2B	E036	5924	DC	XL2'5036'
3C2D	1804	5925	DC	XL2'1804'
3C2F	483A	5926	DC	XL2'483A'
3C31	5039	5927	DC	XL2'5039'
3C33	483A	5928	DC	XL2'483A'
3C35	EF28	5929	DC	XL2'EF28'
3C37	9C3E	5930	DC	XL2'9C3E'
3C39	503D	5931	DC	XL2'503D'
3C3B	503E	5932	DC	XL2'503E'
3C3D	4541	5933	DC	XL2'4541'
3C3F	5040	5934	DC	XL2'5040'
3C41	504A	5935	DC	XL2'504A'
3C43	1504	5936	DC	XL2'1504'
3C45	4545	5937	DC	XL2'4545'
3C47	5044	5938	DC	XL2'5044'
3C49	1804	5939	DC	XL2'1804'
3C4B	4848	5940	DC	XL2'4848'
3C4D	5047	5941	DC	XL2'5047'
3C4F	4848	5942	DC	XL2'4848'
3C51	5026	5943	DC	XL2'5026'
3C53	1308	5944	DC	XL2'1308'
3C55	454D	5945	DC	XL2'454D'
3C57	504C	5946	DC	XL2'504C'
3C59	504D	5947	R3BMCE DC	XL2'504D'
		5948		
		5948		
		5949		***** C A U T I O N ***** DO NOT MOVE THE FOLLOWING CODE.
		5950		***** IT MUST REMAIN ORG'D AT THIS LOCATION TO AGREE WITH U.G.
		5951		
		5952	ORG	X'3FBE'
3FBE		5953	DC	XL2'5000'
3FBE 5000		5954	R2BEXD DC	*
		5955	R2BMCS EQU	
		5955	DC	XL20'50005 (0150025003E004500550065 00750085009'
3FC0	5000500150025 (03	5955		
3FC8	5004500550065 (07	5955		
3FD0	50085009	5955		
3FD4	500A500B500C5 (0D	5956	DC	XL20'500A500B500C500DE00E500F50105 01150125013'
3FDC	500E500F50105 (11	5956		
3FE4	50125013	5956		
3FEB	5014501550165 (17	5957	DC	XL20'5014501550165017E0185019501A501B501C501D'
3FF0	50185019501A5 (1B	5957		
3FFB	501C501D	5957		
3FFC	501E501F	5958	R2BMCE DC	XL4'501E501F'

ORG CE MICROPROGRAM STUFF  
INSERT STOP ADDR. IN LD BYTE



8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for routines like SERIAL WRAP THROUGH IDA DRIVER RECEIVERS and routines for testing driver/receiver circuits (BIT 0 to BIT 4).

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly code for routines like CHECK FOR TEX 2 FEATURE, CHECK FOR TEX 3 FEATURE, CHECK FOR TEX 4 FEATURE, and routines for testing driver/receiver circuits (BIT 5 to BIT 9).

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
4216 C0 87 4426 6093 B WRAP
421A 0C 01 3022 3036 6094 MVC R1FMCE-6(2),HDB902
4220 0C 01 3024 3040 6095 MVC R1FMCE-4(2),LISELC
4226 0C 01 3026 3048 6096 MVC R1FMCE-2(2),WRPOUT
422C 3C 4E 4538 6097 MVI DEVADR,X\*4E\*
4230 3C 36 4443 6098 MVI WRAPEH,X\*36\*
4234 C0 87 4426 6099 B WRAP
6100 \* CHECK FOR TEX 5 FEATURE.
6101 \* TEST 3 LINES IF PRESENT.
6102 \* EXIT IF NOT
4238 38 80 0A0C 6103 TBN UDT2,X\*80\*
423C C0 90 0216 6104 BF LINK
4240 0C 01 3022 3038 6105 MVC R1FMCE-6(2),HDB901
4246 0C 01 3024 3040 6106 MVC R1FMCE-4(2),LISELC
424C 0C 01 3026 3048 6107 MVC R1FMCE-2(2),WRPOUT
4252 3C 4F 4538 6108 MVI DEVADR,X\*4F\*
4256 3C 37 4443 6109 MVI WRAPEH,X\*37\*
425A C0 87 4426 6110 B WRAP
425E 0C 01 3022 302A 6111 MVC R1FMCE-6(2),HDB980
4264 0C 01 3024 3040 6112 MVC R1FMCE-4(2),LISELC
426A 0C 01 3026 3048 6113 MVC R1FMCE-2(2),WRPOUT
4270 3C 50 4538 6114 MVI DEVADR,X\*50\*
4274 3C 30 4443 6115 MVI WRAPEH,X\*30\*
4278 C0 87 4426 6116 B WRAP
427C 0C 01 3022 302C 6117 MVC R1FMCE-6(2),HDB940
4282 0C 01 3024 3040 6118 MVC R1FMCE-4(2),LISELC
4288 0C 01 3026 3048 6119 MVC R1FMCE-2(2),WRPOUT
428E 3C D1 4538 6120 MVI DEVADR,X\*D1\*
4292 3C 31 4443 6121 MVI WRAPEH,X\*31\*
4296 C0 87 4426 6122 B WRAP
6123 \* CHECK FOR TEX 6 FEATURE.
6124 \* TEST 3 LINES IF PRESENT.
6125 \* EXIT IF NOT
429A 38 01 0A0B 6126 TBN UDT2-1,X\*01\*
429E C0 90 0216 6127 BF LINK
42A2 0C 01 3022 302E 6128 MVC R1FMCE-6(2),HDB920
42AB 0C 01 3024 3042 6129 MVC R1FMCE-4(2),LISELD
42AE 0C 01 3026 3048 6130 MVC R1FMCE-2(2),WRPOUT
42B4 3C D2 4538 6131 MVI DEVADR,X\*D2\*
42B8 3C 42 4443 6132 MVI WRAPEH,X\*42\*
42BC C0 87 4426 6133 B WRAP
42C0 0C 01 3022 3030 6134 MVC R1FMCE-6(2),HDB910
42C6 0C 01 3024 3042 6135 MVC R1FMCE-4(2),LISELD
42CC 0C 01 3026 3048 6136 MVC R1FMCE-2(2),WRPOUT
42D2 3C D3 4538 6137 MVI DEVADR,X\*D3\*
42D6 3C 43 4443 6138 MVI WRAPEH,X\*43\*
42DA C0 87 4426 6139 B WRAP
42DE 0C 01 3022 3032 6140 MVC R1FMCE-6(2),HDB908
42E4 0C 01 3024 3042 6141 MVC R1FMCE-4(2),LISELD
42EA 0C 01 3026 3048 6142 MVC R1FMCE-2(2),WRPOUT
42F0 3C D4 4538 6143 MVI DEVADR,X\*D4\*
42F4 3C 44 4443 6144 MVI WRAPEH,X\*44\*
42F8 C0 87 4426 6145 B WRAP
6146 \* CHECK FOR TEX 7 FEATURE.
6147 \* TEST 3 LINES IF PRESENT.
6148 \* EXIT IF NOT
42FC 38 02 0A0B 6149 TBN UDT2-1,X\*02\*
4300 C0 90 0216 6150 BF LINK
4304 0C 01 3022 3034 6151 MVC R1FMCE-6(2),HDB904
430A 0C 01 3024 3042 6152 MVC R1FMCE-4(2),LISELD
4310 0C 01 3026 3048 6153 MVC R1FMCE-2(2),WRPOUT
4316 3C D5 4538 6154 MVI DEVADR,X\*D5\*
431A 3C 45 4443 6155 MVI WRAPEH,X\*45\*
431E C0 87 4426 6156 B WRAP
4322 0C 01 3022 3036 6157 MVC R1FMCE-6(2),HDB902
4328 0C 01 3024 3042 6158 MVC R1FMCE-4(2),LISELD
432E 0C 01 3026 3048 6159 MVC R1FMCE-2(2),WRPOUT
4334 3C D6 4538 6160 MVI DEVADR,X\*D6\*

BIT 6
LINE SEL C
OUTSIDE WRAP
ADDR 4E
ERROR 36

BIT 7
LINE SEL C
OUTSIDE WRAP
ADDR 4F
ERROR 37

BIT 0
LINE SEL C
OUTSIDE WRAP
ADDR 50
ERROR 30

BIT 1
LINE SEL C
OUTSIDE WRAP
ADDR D1
ERROR 31

BIT 2
LINE SEL D
OUTSIDE WRAP
ADDR D2
ERROR 42

BIT 3
LINE SEL D
OUTSIDE WRAP
ADDR D3
ERROR 43

BIT 4
LINE SEL D
OUTSIDE WRAP
ADDR D4
ERROR 44

BIT 5
LINE SEL D
OUTSIDE WRAP
ADDR D5
ERROR 45

BIT 6
LINE SEL D
OUTSIDE WRAP
ADDR D6

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
4338 3C 46 4443 6161 MVI WRAPEH,X\*46\*
433C C0 87 4426 6162 B WRAP
4340 0C 01 3022 3038 6163 MVC R1FMCE-6(2),HDB901
4346 0C 01 3024 3042 6164 MVC R1FMCE-4(2),LISELD
434C 0C 01 3026 3048 6165 MVC R1FMCE-2(2),WRPOUT
4352 3C D7 4538 6166 MVI DEVADR,X\*D7\*
4356 3C 47 4443 6167 MVI WRAPEH,X\*47\*
435A C0 87 4426 6168 B WRAP
6169 \* CHECK FOR TEX 8 FEATURE.
6170 \* TEST 3 LINES IF PRESENT.
6171 \* EXIT IF NOT
435E 38 04 0A0B 6172 TBN UDT2-1,X\*04\*
4362 C0 90 0216 6173 BF LINK
4366 0C 01 3022 302A 6174 MVC R1FMCE-6(2),HDB980
436C 0C 01 3024 3044 6175 MVC R1FMCE-4(2),LISELE
4372 0C 01 3026 3048 6176 MVC R1FMCE-2(2),WRPOUT
4378 3C D8 4538 6177 MVI DEVADR,X\*D8\*
437C 3C 50 4443 6178 MVI WRAPEH,X\*50\*
4380 C0 87 4426 6179 B WRAP
4384 0C 01 3022 302C 6180 MVC R1FMCE-6(2),HDB940
438A 0C 01 3024 3044 6181 MVC R1FMCE-4(2),LISELE
4390 0C 01 3026 3048 6182 MVC R1FMCE-2(2),WRPOUT
4396 3C D9 4538 6183 MVI DEVADR,X\*D9\*
439A 3C 51 4443 6184 MVI WRAPEH,X\*51\*
439E C0 87 4426 6185 B WRAP
43A2 0C 01 3022 302E 6186 MVC R1FMCE-6(2),HDB920
43AB 0C 01 3024 3044 6187 MVC R1FMCE-4(2),LISELE
43AE 0C 01 3026 3048 6188 MVC R1FMCE-2(2),WRPOUT
43B4 3C 5A 4538 6189 MVI DEVADR,X\*5A\*
43B8 3C 52 4443 6190 MVI WRAPEH,X\*52\*
43BC C0 87 4426 6191 B WRAP
6192 \* CHECK FOR TEX 9 FEATURE.
6193 \* TEST 3 LINES IF PRESENT.
6194 \* EXIT IF NOT
43C0 38 08 0A0B 6195 TBN UDT2-1,X\*08\*
43C4 C0 90 0216 6196 BF LINK
43C8 0C 01 3022 3030 6197 MVC R1FMCE-6(2),HDB910
43CE 0C 01 3024 3044 6198 MVC R1FMCE-4(2),LISELE
43D4 0C 01 3026 3048 6199 MVC R1FMCE-2(2),WRPOUT
43DA 3C 5B 4538 6200 MVI DEVADR,X\*5B\*
43DE 3C 53 4443 6201 MVI WRAPEH,X\*53\*
43E2 C0 87 4426 6202 B WRAP
43E6 0C 01 3022 3032 6203 MVC R1FMCE-6(2),HDB908
43EC 0C 01 3024 3044 6204 MVC R1FMCE-4(2),LISELE
43F2 0C 01 3026 3048 6205 MVC R1FMCE-2(2),WRPOUT
43F8 3C 5C 4538 6206 MVI DEVADR,X\*5C\*
43FC 3C 54 4443 6207 MVI WRAPEH,X\*54\*
4400 C0 87 4426 6208 B WRAP
4404 0C 01 3022 3034 6209 MVC R1FMCE-6(2),HDB904
440A 0C 01 3024 3044 6210 MVC R1FMCE-4(2),LISELE
4410 0C 01 3026 3048 6211 MVC R1FMCE-2(2),WRPOUT
4416 3C 5D 4538 6212 MVI DEVADR,X\*5D\*
441A 3C 55 4443 6213 MVI WRAPEH,X\*55\*
441E C0 87 4426 6214 B WRAP
4422 C0 87 0216 6215 B LINK
6216 \*\*\*\*\*
6217 \*\*\*\*\*
6218 \*\*\*\*\*
6219 \* WRAP SUBROUTINE.
6220 \*\*\*\*\*
6221 \*\*\*\*\*
6222 WRAP ST WRAPEH+3,ARR
6223 B LOADCS
6224 DC XL1\*83\*
6225 DC AL2(R1FMCE)
6226 DC AL2(R1FMCE)
6227 LIO X0343,HDB0
6228 MVI LPCNT,X\*10\*

ERROR 46
BIT 7
LINE SEL D
OUTSIDE WRAP
ADDR D7
ERROR 47

BIT 0
LINE SEL E
OUTSIDE WRAP
ADDR D8
ERROR 50

BIT 1
LINE SEL E
OUTSIDE WRAP
ADDR D9
ERROR 51

BIT 2
LINE SEL E
OUTSIDE WRAP
ADDR 5A
ERROR 52

BIT 3
LINE SEL E
OUTSIDE WRAP
ADDR 5B
ERROR 53

BIT 4
LINE SEL E
OUTSIDE WRAP
ADDR 5C
ERROR 54

BIT 5
LINE SEL E
OUTSIDE WRAP
ADDR 5D
ERROR 55

SAVE ARR
LOAD MICROCODE
DISABLE UPON ENTRY.
START
FINISH
LOAD VALUE TO BE USED.
INCREASE MICROPROGRAM TIME.

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
443B 3A 01 554D 6229 SBN EMBP,X\*01\* SET ON ERROR HALT BYPASS BIT.
443F C0 87 54FE 6230 B DOMICR BRANCH TO DD MICROPROGRAM
4443 00 4443 6231 WRAPEH DC XL1\*00\* ERROR HALT CODE
4444 5037 4445 6232 WRAPEX DC XL2\*5037\* EXPECTED HALT
4446 0D 01 4445 5F66 6233 CLC WRAPEXP(2),STATAC CHECK IF ERROR OCCURRED.
444C F2 81 31 6234 JE WRAPEX JUMP IF NOT
444F C0 87 021A 6235 B PRINT
4453 81 4453 6236 DC XL1\*81\*
4454 3D 4454 6237 DC IL1\*61\*
4455 44DC 4456 6238 DC AL2(COAX1)
4457 C0 87 021A 6239 B PRINT
4458 81 4458 6240 DC XL1\*81\*
445C 34 445C 6241 DC IL1\*52\*
445D 4510 445E 6242 DC AL2(COAX2)
445F C0 87 021A 6243 B PRINT
4463 82 4463 6244 DC XL1\*82\*
4464 27 4464 6245 DC IL1\*39\*
4465 4537 4466 6246 DC AL2(COAX3)
4467 C0 87 021E 6247 B UNPACK
4468 01 4468 6248 DC XL1\*01\*
446C 4538 446D 6249 DC AL2(DEVADR)
446E 449F 446F 6250 DC AL2(ACRMSG)
4470 C0 87 021A 6251 B PRINT
4474 82 4474 6252 DC XL1\*82\*
4475 1C 4475 6253 DC IL1\*28\*
4476 449F 4477 6254 DC AL2(ACRMSG)
4478 C0 87 525A 6255 B PIORREG GO PRINT I/O REG
447C C0 87 021E 6256 B LINK
4480 C0 87 4480 6257 WRAPEX B RETURN
6258
4484 C6C1C9D3C9D5C740 449F 6259 ADMSG DC CL28\* FAILING DEVICE ADDRESS IS XX\*
448C C4C5E5C9C3C54 C1 6259
4494 C4C4D9C5E2E24 C9 6259
449C E240E7E7 6259
44A0 D7D6E6C5D96D C6 44CF 6260 DC CL46\* POWER-OFF OR OPEN COAX AT A TERMINAL MIGHT CAUSE\*
44A8 C640D6D940D6D C5 6260
44B0 D540C3D6C1E74 C1 6260
44B8 E340C140E3C5D SD4 6260
44C0 C9D5C1D340D4C C7 6260
44C8 C8E340C3C1E4E C5 6260
44D0 40E3C8C9E240C C1 44DC 6261 COAX1 DC CL13\* THIS FAILURE\*
44D8 C9D3E4D9C5 6261
44DD D6D7C5D5C9D5C 740 4504 6262 DC CL40\* OPENING THE COAX AT THE CPU WILL AVOID T\*
44E5 E3C8C540C3D6C 1E7 6262
44ED 40C1E340E3C8C 540 6262
44F5 C3D7E440E6C9D 3D3 6262
44FD 40C1E5D6C9C44 C3 6262
4505 C8C9E240C5E7D 7D6 4510 6263 COAX2 DC CL12\* HIS EXPOSURE\*
450D E2E4D9C5 6263
4511 5C5C40C2C54 C2 4537 6264 COAX3 DC CL39\*\*\* BE SUPE TO RECONNECT AFTER TEST \*\*\*
4519 E4D9C540E3D64 C9 6264
4521 C5C3D6D5D5C5C 3E3 6264
4529 40C1C6E3C5D94 C3 6264
4531 C5E2E340C5C5 C 6264
4538 00 4538 6265 DEVADR DC XL1\*00\* DEVICE ADDR.
4539 0343 453A 6266 X0343 DC XL2\*0343
6267 \* END OF WRAP SUBROUTINE
6268 \*\*\*\*\*

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
6270 \*\*\*\*\*
6271 \* ROUTINES 3D,3E. SPARE.
6272 \*\*\*\*\*
453B 3D 453B 6273 RT3D DC XL1\*3D\*
453C 00 453C 6274 DC XL1\*00\*
453D 4549 453E 6275 DC AL2(RT3E)
453F 0C 01 3596 4A C2 6276 MVC SPARUT(2),DEC3D
4545 C0 87 3584 6277 B SPAREX
6278 \*
4549 3E 4549 6279 RT3E DC XL1\*3E\*
454A 00 454A 6280 DC XL1\*00\*
454B 4557 454C 6281 DC AL2(RT3F)
454D 0C 01 3596 4A C4 6282 MVC SPARUT(2),DEC3E
4553 C0 87 3584 6283 B SPAREX
6284 \*
6285 \*\*\*\*\*
6286 \* ROUTINE 3F. DEVICE POLLING
6287 \* POLL CMDS ARE ISSUED TO ALL DEVICES THAT MAY BE ATTACHED.
6288 \* ---
6289 \* UDT DEFINES THE NUMBER OF DRIVER/RECEIVER CARDS. EACH CARD
6290 \* HAS 3 DRIVER/RECEIVER CIRCUITS TO POLL THROUGH. THERE MAY
6291 \* OR MAY NOT BE A DEVICE ATTACHED.
6292 \*
6293 \* THE RESPONSE TO THE POLL IS NOT CHECKED.
6294 \*\*\*\*\*
4557 3F 4557 6295 RT3F DC XL1\*3F\* ROUT NO.
4558 80 4558 6296 DC XL1\*80\* YES, MANUAL INTERVENTION(MAYBE)
4559 4AC5 455A 6297 DC AL2(RT40)
455B C0 87 021A 6298 B PRINT
455F 01 455F 6299 DC XL1\*01\*
4560 2E 4560 6300 DC IL1\*46\*
4561 4594 4562 6301 DC AL2(RT3FNA)
4563 C0 87 4595 6302 B RT3FPG
4567 D9D6E4E340F3C 640 4594 6303 RT3FNA DC CL46\* RCUT 3F DEVICE POLLING (SKIPPED IF SSW2 IS ON)\*
456F C4C5E5C9C3C54 C07 6303
4577 D6D3C3C9D5C74 C4D 6303
457F E2D2C9D7D7C5C 4A0 6303
4587 C9C640E2E2E6F 240 6303
458F C9E240D6D55D 6303
4595 3C FF 4A76 6304 RT3FPG MVI POLLYE,X\*FF\*
4599 0C 1E 4A75 4A76 6305 MVC POLLYE-1(31),POLLYE
459F 3C FF 4A96 6306 MVI POLLNO,X\*FF\*
45A3 0C 1E 4A95 4A56 6307 MVC POLLNO-1(31),POLLNO
6308
6309 \* POLL FIRST 3. (BASIC)
6310 MVI DEV3F,X\*40\*
6311 MVC R3FMCS+13(2),HDB980 BIT 0.
6312 MVC R3FMCS+15(2),LISELA LINE SEL A.
6313 B POLL3F GO POLL 40.
6314 MVI DEV3F,X\*C1\*
6315 MVC R3FMCS+13(2),HDB940 BIT 1.
6316 B POLL3F GO POLL C1.
6317 MVI DEV3F,X\*C2\*
6318 MVC R3FMCS+13(2),HDB920 BIT 2.
6319 B POLL3F GO POLL C2.
6320 \* CHECK FOR TEX1 FEATURE.
6321 \* POLL 3 IF PRESENT. C3,C4,C5
6322 TBN UOT2,X\*06\*
6323 BF PRTABL
6324 MVI DEV3F,X\*C3\*
6325 MVC R3FMCS+13(2),HDB910 BIT3
6326 B POLL3F GO POLL C3.
6327 MVI DEV3F,X\*C4\*
6328 MVC R3FMCS+13(2),HDB908 BIT-4
6329 B POLL3F GO POLL C4.
6330 MVI DEV3F,X\*C5\*
6331 MVC R3FMCS+13(2),HDB904 BIT 5.
6332 B POLL3F GO POLL C5.

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

6333 * CHECK FOR TEX 2 FEATURE.
6334 * POLL 3 IF PRESENT. C6,C7,C8
6335 TBN UDT2,X*10*
6336 BF PRTABL
6337 MVI DEV3F,X*C6*
6338 MVC R3FMCS+15(2),LISELB LINE SELECT B
6339 MVC R3FMCS+13(2),HDB902 BIT 6
6340 B POLL3F GO POLL C6
6341 MVI DEV3F,X*C7*
6342 MVC R3FMCS+13(2),HDB901 BIT 7
6343 B POLL3F GO POLL C7
6344 MVI DEV3F,X*C8*
6345 MVC R3FMCS+13(2),HDB980 BIT 0
6346 B POLL3F GO POLL C8
6347 * CHECK FOR TEX3 FEATURE
6348 * POLL C9,4A,4B IF PRESENT
6349 TBN UDT2,X*20*
6350 BF PRTABL
6351 MVI DEV3F,X*C9*
6352 MVC R3FMCS+13(2),HDB940 BIT 1
6353 B POLL3F GO POLL C9
6354 MVI DEV3F,X*4A*
6355 MVC R3FMCS+13(2),HDB920 BIT 2
6356 B POLL3F GO POLL 4A
6357 MVI DEV3F,X*4B*
6358 MVC R3FMCS+13(2),HDB910 BIT 3
6359 B POLL3F GO POLL 4B
6360 * CHECK FOR TEX4 FEATURE.
6361 * POLL 8C,4D,4E IF PRESENT.
6362 TBN UDT2,X*40*
6363 BF PRTABL
6364 MVI DEV3F,X*4C*
6365 MVC R3FMCS+13(2),HDB908 BIT 4
6366 MVC R3FMCS+15(2),LISELC LINE SELECT C
6367 B POLL3F GO POLL 4C.
6368 MVI DEV3F,X*4D*
6369 MVC R3FMCS+13(2),HDB904 BIT 5
6370 B POLL3F
6371 MVI DEV3F,X*4E*
6372 MVC R3FMCS+13(2),HDB902 BIT 6
6373 B POLL3F GO POLL 4E
6374 * CHECK FOR TEX5 FEATURE
6375 * POLL 4F,50,D1 IF PRESENT
6376 TBN UDT2,X*80*
6377 BF PRTABL
6378 MVI DEV3F,X*4F*
6379 MVC R3FMCS+13(2),HDB901 BIT 7
6380 B POLL3F GO POLL 4F
6381 MVI DEV3F,X*50*
6382 MVC R3FMCS+13(2),HDB980 BIT 0
6383 B POLL3F GO POLL 50
6384 MVI DEV3F,X*D1*
6385 MVC R3FMCS+13(2),HDB940 BIT 1
6386 B POLL3F GO POLL D1
6387 * CHECK FOR TEX6 FEATURE.
6388 * POLL D2,D3,D4 IF PRESENT.
6389 TBN UDT2-1,X*01*
6390 BF PRTABL
6391 MVI DEV3F,X*D2*
6392 MVC R3FMCS+13(2),HDB920 BIT 2
6393 MVC R3FMCS+15(2),LISELD LINE SELECT D
6394 B POLL3F GO POLL D2
6395 MVI DEV3F,X*D3*
6396 MVC R3FMCS+13(2),HDB910 BIT 3
6397 B POLL3F GO POLL D3
6398 MVI DEV3F,X*D4*
6399 MVC R3FMCS+13(2),HDB908 BIT 4
6400 B POLL3F GO POLL D4

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

6401 * CHECK FOR TEX7 FEATURE.
6402 * POLL D5,D6,D7 IF PRESENT.
6403 TBN UDT2-1,X*02*
6404 BF PRTABL
6405 MVI DEV3F,X*D5*
6406 MVC R3FMCS+13(2),HDB904 BIT 5
6407 B POLL3F GO POLL D5
6408 MVI DEV3F,X*C6*
6409 MVC R3FMCS+13(2),HDB902 BIT 6
6410 B POLL3F GO POLL D6
6411 MVI DEV3F,X*C7*
6412 MVC R3FMCS+13(2),HDB901 BIT 7
6413 B POLL3F GO POLL D7
6414 * CHECK FOR TEX8 FEATURE.
6415 * POLL D8,D9,5A IF PRESENT.
6416 TBN UDT2-1,X*04*
6417 BF PRTABL
6418 MVI DEV3F,X*D8*
6419 MVC R3FMCS+13(2),HDB980 BIT 0
6420 MVC R3FMCS+15(2),LISELE LINE SELECT E
6421 B POLL3F GO POLL D8
6422 MVI DEV3F,X*D9*
6423 MVC R3FMCS+13(2),HDB940 BIT 1
6424 B POLL3F GO POLL D9
6425 MVI DEV3F,X*5A*
6426 MVC R3FMCS+13(2),HDB920 BIT 2
6427 B POLL3F GO POLL 5A
6428 * CHECK FOR TEX9 FEATURE.
6429 * POLL 5B,5C,5D IF PRESENT.
6430 TBN UDT2-1,X*08*
6431 BF PRTABL
6432 MVI DEV3F,X*5B*
6433 MVC R3FMCS+13(2),HDB910 BIT 3
6434 B POLL3F GO POLL 5B
6435 MVI DEV3F,X*5C*
6436 MVC R3FMCS+13(2),HDB908 BIT 4
6437 B POLL3F GO POLL 5C
6438 MVI DEV3F,X*5D*
6439 MVC R3FMCS+13(2),HDB904 BIT 5
6440 B POLL3F GO POLL 5D
6441 B PRTABL
6442
6443 PRTABL B PRINT
6444 DC XL1*02*
6445 DC IL1*66*
6446 DC AL2(R3FM01)
6447 MVC CKFFY+3(2),POLYA
6448 CKFFY CLI *-*,X*FF* BR IF NO ENTRY
6449 BE EMPTYE
6450 MVC CKFFY1+3(2),POLYA
6451 CKFFY1 CLI *-*,X*FF*
6452 BE ENDYES
6453 MVC SETDA1+5(2),CKFFY1+3
6454 SETDA1 MVC DEV3F(1),*-*
6455 B UNPACK
6456 DC XL1*01*
6457 DC AL2(DEV3F)
6458 DC AL2(R3FM02)
6459 B PRINT
6460 DC XL1*01*
6461 DC IL1*17*
6462 DC AL2(R3FM02)
6463 ALC CKFFY1+3(2),X0001 INC ADDR
6464 B CKFFY1
6465
6466 EMPTYE B PRINT PRINT *NONE*
6467 DC XL1*03*
6468 DC IL1*04*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

4A57 40404040404040 4A76 6572 POLLYE DC 32CL1' \*
4A5F 40404040404040 6572
4A67 40404040404040 6572
4A6F 40404040404040 6572
4A77 40404040404040 4A96 6573 POLLNO DC 32CL1' \*
4A7F 40404040404040 6573
4A87 40404040404040 6573
4A8F 40404040404040 6573
6574 \*\*\*\*\*
6575 \* START OF MICROPROGRAM LISTING \*
6576 \*\*\*\*\*
4A97 6577 R3FMCS EQU \*
4A98 6578 DC XL2'79C0' 000 IC HDB9='00'

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

4B16 4DA4 4B17 6627 DC AL2(NTFM1)
4B18 C0 87 021A 6628 B PRINT
4B1C 86 4B1C 6629 DC XL1'86'
4B1D 21 4B1D 6630 DC IL1'33'
4B1F 4DC5 4B1F 6631 DC AL2(NTFM2)
6632
6633 IOCHKN SIO X'84'.SIO1 .DISABLE & TURN ON DIAG #2
6634 LIO XAA55.HDB2 .LOAD BAD PARITY IN HDB'S
6635 SIO X'80'.SIO1 .DISABLE & RESET DIAG #2
6636 SNS STACAC.HCB2 .CAUSE ATTACHMENT CHECK
6637
6638 B PRINT IS I/O CHECK ON?
4B2E C0 87 021A 6638 B PRINT
4B32 86 4B32 6639 DC XL1'86'
4B33 1A 4B33 6640 DC IL1'26'



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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

4D2B 3D 00 65F3 4D2B 6831 R2AEXT EQU \*
4D2F C0 81 0216 6832 CLI IPLFLG.0 \*\*\* REMOVE FOR RELEASE \*\*\*
4D33 C0 87 6606 6833 BE LINK \*\*\* REMOVE FOR RELEASE \*\*\*
4D37 C0 87 022A 6834 B TERLNK \*\*\* REMOVE FOR RELEASE \*\*\*
4D3B 00 4D3B 6835 LNKTER B LOAD .TERMINATE SECTION
4D3B 00 4D3B 6836 DC XL1'0'

4E0B 05D640D7C3404 (40 4EE4 6853 NTFE4 DC CL10'NO PC
4EE3 4040 6853
4EE5 E2C9D6 4EE7 6854 NTFSD DC CL3'SIO'
4EE8 E2D5E2 4EEA 6855 NTFSDS DC CL3'SNS'
4EEB D3C9D6 4EED 6856 NTFSD DC CL3'LIO'
4EEE E3C9D6 4EF0 6857 NTFSD DC CL3'TIO'



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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

4F90 4B40F3C6C3F06 QF3 6908  
 4F96 C6C6C640C1E24 CD9 6908  
 4FA0 C5D84B 6908  
 6909  
 6910 \*\*\*\*\*  
 6911 \* ROUTINE 42 - CHECK OUT C.E. CARD \*  
 6912 \*\*\*\*\*  
 6913 \*  
 6914 \* THIS ROUTINE IS CCDE USED TO CHECK OUT THE C.E. DIAGNOSTIC \*  
 6915 \* AID CARD TO VERIFY THAT IT IS WORKING PROPERLY. 891 MUST BE \*  
 6916 \* CAPABLE OF RUNNING ERROR FREE BEFORE THIS ROUTINE CAN BE USED. \*  
 6917 \*  
 6918 \*\*\*\*\*  
 6919  
 4FA3 42 4FA3 6920 RT42 DC XL1'42' RCUTINE NUMBER  
 4FA4 00 4FA4 6921 DC XL1'00'  
 4FA5 5092 4FA6 6922 DC AL2(RT43) LAST ROUTINE  
 6923  
 6924 B PRINT PRINT ROUTINE HDR  
 4FAB 01 4FAB 6925 DC XL1'01'  
 4FAC 18 4FAC 6926 DC IL1'24'  
 4FAD 5091 4FAE 6927 DC AL2(R2EMSG)  
 4FAF C0 87 5D38 6928 RT2EG0 B LDDP  
 4FB3 C0 87 5020 6929 B R40LD  
 6930 \*  
 4FB7 C0 87 0222 6931 B HALT  
 4FBB 14F0 4FBC 6932 R40H0 DC XL2'14F0'  
 6933  
 4FBD 3C 00 5071 6934 MVI R40DT,0  
 4FC1 F3 58 E0 6935 SIO X'E0'.SIOI  
 4FC4 0D FF 5512 5512 6936 R40TOL CLC REPEAT(256).REPEAT  
 4FCA 0E 00 5071 5A(B) 6937 /LC R40DT(1).WUN  
 4FD0 C0 20 4FC4 6938 BNOL R40TOL  
 4FD4 F3 58 80 6939 SIO X'80'.SIOI  
 4FD7 C0 87 0222 6940 B HALT  
 4FDB 14F1 4FDC 6941 DC XL2'14F1'  
 6942  
 4FDD F3 58 E0 6943 SIO X'E0'.SIOI  
 4FE0 C0 87 0222 6944 B HALT  
 4FE4 14F2 4FE5 6945 DC XL2'14F2'  
 4FE6 C0 87 0878 6946 B R03ST  
 4FEA C0 87 0222 6947 R40R1 B HALT  
 4FEE 14F3 4FEF 6948 DC XL2'14F3'  
 4FF0 C0 87 30CD 6949 B R21ST  
 4FF4 C0 87 0222 6950 R40R2 B HALT  
 4FF8 14F4 4FF9 6951 DC XL2'14F4'  
 6952  
 4FFA C0 87 5020 6952 B R40LD  
 4FFE F3 58 C0 6953 SIO X'C0'.SIOI  
 5001 31 58 5073 6954 R40SY LIO R40C1.CTSTOR  
 5005 31 58 506F 6955 LIO R40ST.CTSTOR  
 5009 31 58 5075 6956 LIO R40C3.CTSTOR  
 500D F3 58 80 6957 SIO X'80'.SIOI  
 5010 F3 58 E0 6958 SIO X'E0'.SIOI  
 5013 0D FF 5512 5512 6959 CLC REPEAT(256).REPEAT  
 5019 F3 58 80 6960 SIO X'80'.SIOI  
 501C C0 87 4FFE 6961 B R40SY  
 6962  
 6963 \*  
 6964 \* SUBROUTINE TO LOAD CONTROL STORE WITH BRANCH TO NEXT ADDRESS \*  
 6965 \*  
 5020 34 08 506C 6966 R40LD ST R40LDR+3.ARR  
 6967  
 5024 0C 01 5071 506F 6968 R40SLD MVC R40DT(2).R40ST  
 502A F3 58 80 6969 SIO X'80'.SIOI  
 502D F3 58 C0 6970 SIO X'C0'.SIOI  
 5030 31 58 5071 6971 R40L2 LIO R40DT.CTSTOR  
 5034 0E 01 5071 5A(B) 6972 ALC R40DT(2).WUN  
 503A 0D 00 5070 506D 6973 CLC R40DT-1(1).R40E

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

5040 C0 01 5030 6974 BNE R40L2  
 5044 31 58 5079 6975 LIO RT400.CTSTOR  
 6976 \*  
 5048 0C 01 5071 506F 6977 MVC R40DT(2).R40ST  
 504E 31 58 5071 6978 R40L3 LIO R40DT.CTSTOR  
 5052 0E 01 5071 5A(B) 6979 ALC R40DT(2).WUN  
 5058 0D 00 5070 506D 6980 CLC R40DT-1(1).R40E  
 505E C0 01 504E 6981 BNE R40L3  
 5062 31 58 5077 6982 LIO RT000.CTSTOR  
 5066 F3 58 80 6983 SIO X'80'.SIOI  
 5069 C0 87 0000 6984 R40LDR B  
 6985 \*-\*  
 506D 54 506D 6986 R40E DC XL1'54'  
 506E 5001 506F 6987 R40ST DC XL2'5001'  
 5070 0000 5071 6988 R40ST DC XL2'0'  
 5072 5002 5073 6989 R40C1 DC XL2'5002'  
 5074 5003 5075 6990 R40C3 DC XL2'5003'  
 5076 D000 5077 6991 RT000 DC XL2'D000'  
 5078 D400 5079 6992 RT400 DC XL2'D400'  
 507A D9D6E4E340F4F 240 5091 6993 R2EMSG DC CL24'ROUT 42 CE CARD CHECKOUT'  
 5082 C3C540C3C1D9C 440 6993  
 508A C3C8C5C3D2D6E 4E3 6993  
 6994  
 6995 \*\*\*\*\*  
 6996 \* ROUTINE 43 - DUMP HDB'S AND CONTROL STORE. \*  
 6997 \*\*\*\*\*  
 6998 \*  
 6999 \* THIS ROUTINE CAN BE USED TO DUMP THE CONTENTS OF THE HDB'S. \*  
 7000 \* AND CONTROL STORAGE. \*  
 7001 \*  
 7002 \*\*\*\*\*  
 7003  
 5092 43 5092 7004 RT43 DC XL1'43'  
 5093 00 5093 7005 DC XL1'00'  
 5094 FFFF 5095 7006 DC XL2'FFFF'  
 5096 C0 87 021A 7007 B PRINT  
 7008 PRINT ROUTINE HEADING  
 509A 01 509A 7009 DC XL1'01'  
 509B 1D 509B 7010 DC IL1'29'  
 509C 50D2 509D 7011 DC AL2(R2FMMSG)  
 509E C0 87 5D38 7012 R2FADL B LDDP  
 50A2 C0 87 5BF9 7013 B HDBL  
 50A6 C0 87 5BE7 7014 B HDBH  
 50AA C0 87 1056 7015 B HDBL1  
 50AE C0 87 1084 7016 B HDBH1  
 50B2 C0 87 50D3 7017 B R2CST  
 50B6 D9D6E4E340F0F 140 50D2 7018 R2FMMSG DC CL29'ROUT 01 HDB & CS DUMP UTILITY'  
 50BE C8C4C2405040C 2E2 7018  
 50C6 40C4E4D4D740E 4E3 7018  
 50CE C9C3C9E3E8 7018  
 7019

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

7021
7022 \*\*\*\*\*
7023 \* ROUTINE 43 CONTINUED. START CTL STORE DUMP \*
7024 \*\*\*\*\*
7025 \*
50D3 3B 08 0208 7026 R2CST SBF SBYTE0,X\*08\* .RESET SENSE SWITCH 04
50D7 C0 87 5D38 7027 B LDDP .GO LOAD OP DECODES
50DB F3 58 80 7028 SID X\*80\*,SI0I .RESET ATTACHMENT
50DE F3 58 C0 7029 R2CENA SID X\*C0\*,SICI .ENABLE ATTACHMENT
50E1 3C 00 5229 7030 MVI RT2CAT,0 .RESET ATT. CHK. FLG.
50E5 0F 01 5673 5673 7031 SLC R05W01(2),R05W01 .SET STARTING ADDRESS TO ZERO
50E6 C2 01 5701 7032 R2CRST LA R05W1B,XR1 .POINT XR1 TO START OF DUMP AREA
7033
50EF 30 58 5FE6 7034 R2CK01 SNS STATAB,CTSTCR .SENSE CONTROL STORE WORD
50F3 AC 01 01 5FE6 7035 MVC 1(2,XR1),STATAB .MOVE TO DUMP AREA
50F8 3D 00 5229 7036 CLI RT2CAT,0 .TEST FOR NC ATT. CHK. YET
50FC F2 01 04 7037 JNE R2CINC .JUMP IF ATT. CHK. HAS OCCURRED
50FF C1 5D 5203 7038 TIO R2CATT,ATTCHK .TEST FOR ATTACHMENT CHECK
5103 D2 01 02 7039 R2CINC LA 2(XR1),XR1 .INCREMENT TO NEXT WORD
5106 0E 01 5673 5A 0B 7040 ALC R05W01(2),WUN .INCREMENT ADDRESS
510C 3D 00 5673 7041 CLI R05W01,0 .TEST FOR INCR. TO ZERO
5110 C0 01 50EF 7042 BNE R2CK01 .SENSE NEXT WORD IF NOT
7043
5114 3C 80 51CE 7044 MVI R2CPX,X\*80\* .SET UP FOR 1ST 256 WORDS
5118 3D 01 5672 7045 CLI R05W01-1,1 .TEST FOR 1ST 256 WORDS
511C F2 81 9E 7046 JE R2CP13 .JUMP IF 1ST 256 WORDS
511F 3C 40 51CE 7047 MVI R2CPX,X\*40\* .SET UP FOR 2ND 256 WORDS
5123 3D 02 5672 7048 CLI R05W01-1,2 .TEST FOR 2ND 256 WORDS
5127 F2 81 93 7049 JE R2CP13 .JUMP IF 2ND 256 WORDS
512A 3C 20 51CE 7050 MVI R2CPX,X\*20\* .SET UP FOR 3RD 256 WORDS
512E 3D 03 5672 7051 CLI R05W01-1,3 .TEST FOR 3RD 256 WORDS
5132 F2 81 88 7052 JE R2CP13 .JUMP IF 3RD 256 WORDS
5135 3C 10 51CE 7053 MVI R2CPX,X\*10\* .SET UP FOR 4TH 256 WORDS
7054
5139 3D 04 5672 7055 CLI R05W01-1,X\*04\* TEST FOR 4TH 256 WORDS
513D F2 81 7D 7056 JE R2CP13
5140 3C 8C 51CE 7057 MVI R2CPX,X\*8C\* SET FOR 1ST 256 WORDS OF 2ND FET
5144 3D 05 5672 7058 CLI R05W01-1,X\*05\* TEST FOR 1ST 256 WRDS OF 2ND FET
5148 F2 81 72 7059 JE R2CP13
514B 3C 4C 51CE 7060 MVI R2CPX,X\*4C\* SET FOR 2ND 256 WORDS OF 2ND FET
514F 3D 06 5672 7061 CLI R05W01-1,X\*06\* TEST FOR 2ND 256 WRDS OF 2ND FET
7062 JE R2CP13
5153 F2 81 67 7063 MVI R2CPX,X\*2C\* SET FOR 3RD 256 WORDS OF 2ND FET
5156 3C 2C 51CE 7064 CLI R05W01-1,X\*07\* TEST FOR 3RD 256 WRDS OF 2ND FET
515A 3D 07 5672 7065 JE R2CP13
515E F2 81 5C 7066 MVI R2CPX,X\*1C\* SET THE 4TH 256 WORDS OF 2ND FET
5161 3C 1C 51CE 7067 CLI R05W01-1,X\*08\* TEST FOR 4TH 256 WRDS OF 2ND FET
5165 3D 08 5672 7068 JE R2CP13
5169 F2 81 51 7069 MVI R2CPX,X\*8A\* SET FOR 1ST 256 WORDS OF 3RD FET
516C 3C 8A 51CE 7070 CLI R05W01-1,X\*09\* TEST FOR 1ST 256 WRDS OF 3RD FET
5170 3D 09 5672 7071 JE R2CP13
5174 F2 81 46 7072 MVI R2CPX,X\*4A\* SET FOR 2ND 256 WORDS OF 3RD FET
5177 3C 4A 51CE 7073 CLI R05W01-1,X\*0A\* TEST FOR 2ND 256 WRDS OF 3RD FET
517B 3D 0A 5672 7074 JE R2CP13
517F F2 81 3B 7075 MVI R2CPX,X\*2A\* SET FOR 3RD 256 WORDS OF 3RD FET
5182 3C 2A 51CE 7076 CLI R05W01-1,X\*0B\* TEST FOR 3RD 256 WRDS OF 3RD FET
5186 3D 0B 5672 7077 JE R2CP13
518A F2 81 30 7078 MVI R2CPX,X\*1A\* SET FOR 4TH 256 WORDS OF 3RD FET
518D 3C 1A 51CE 7079 CLI R05W01-1,X\*0C\* TEST FOR 4TH 256 WRDS OF 3RD FET
5191 3D 0C 5672 7080 JE R2CP13
5195 F2 81 25 7081 MVI R2CPX,X\*89\* SET FOR 1ST 256 WORDS OF 4TH FET
5198 3C 89 51CE 7082 CLI R05W01-1,X\*0D\* TEST FOR 1ST 256 WRDS OF 4TH FET
519C 3D 0D 5672 7083 JE R2CP13
51A0 F2 81 1A 7084 MVI R2CPX,X\*49\* SET FOR 2ND 256 WORDS OF 4TH FET
51A3 3C 49 51CE 7085 CLI R05W01-1,X\*0E\* TEST FOR 2ND 256 WRDS OF 4TH FET
51A7 3D 0E 5672 7086 JE R2CP13
51AB F2 81 0F 7087 MVI R2CPX,X\*29\* SET FOR 3RD 256 WORDS OF 4TH FET
51AE 3C 29 51CE 7088 CLI R05W01-1,X\*0F\* TEST FOR 3RD 256 WRDS OF 4TH FET
51B2 3D 0F 5672

7089 JE R2CP13
7090 MVI R2CPX,X\*19\*
7091 R2CP13 MVC R2CTSX+1(1),R2CPX SET FOR 4TH 256 WORDS OF 4TH FET
7092 \* .MOVE IN CONSTANT TO TEST
7093 R2CTSX TBN SBYTE3,\*\*\* SENSE SWITCH ON
7094 JT R2CK02 .TEST SENSE SWITCH ON
7095 B R05DCS .SKIP PRINTOUT IF ON
7096 R2CPX DC XL1\*0\* .GO PRINT 256 WORDS
7097 \* .CONSTANT TO SELECT 256 BLOCK
7098 R2CK02 CLI R05W01-1,X\*04\* GETS FILLED IN
7099 BL R2CRST TEST FOR END OF 1ST FET
7100 CLI R05W01-1,X\*08\*
7101 BL R2CRST TEST FOR END OF 2ND FET
7102 TBN LDT2,X\*02\*
7103 BF ACHCHK 3RD FET INSTALLED?
7104 CLI R05W01-1,X\*0C\*
7105 BL R2CRST TEST FOR END OF 3RD FET
7106 CLI R05W01-1,X\*10\*
7107 BL R2CRST TEST FOR END OF 4TH FET
7108 ACHCHK CLI RT2CAT,X\*00\*
7109 JNE R2CPRT .TEST FOR NO ATTACHMENT CHECK
7110 R2CTER B LOAD .PRINT MESSAGE IF ATT. CHK.
7111 DC XL1\*0\* .TERMINATE ROUTINE
7112
7113 R2CATT MVI RT2CAT,X\*FF\* .SET ATTACHMENT CHECK ON
7114 B UNPACK .UNPACK ADDRESS
7115 DC XL1\*02\*
7116 DC AL2(R05W01)
7117 DC AL2(R2CMG1)
7118 B UNPACK .UNPACK DATA
7119 DC XL1\*02\*
7120 DC AL2(STATAB)
7121 DC AL2(R2CMG2)
7122 B R2CINC .RETURN TO MAIN LOOP
7123
7124 R2CPRT B PRINT
7125 DC XL1\*06\* .PRINT 1ST ATT. CHK. MSG.
7126 DC IL1\*48\*
7127 DC AL2(R2CMG2)
7128 B R2CTER .TERMINATE
7129
7130 RT2CAT DC XL1\*0: .ATTACHMENT CHECK FLAG
7131
7132 R2CMG1 DC CL35\*FIRST ATTACHMENT CHECK AT ADDR XXXX\*
7133
7134 C6C9D9E2E340CJE3 524C 7132
7135 E3C1C3C8D4C5DJE3 7132
7136 40C3C8C5C3D24(C1 7132
7137 E340C1C4C4D9A(E7 7132
7138 E7E7E7 7132
7139 6B40C4C1E3C14(7E 5259 7133 R2CMG2 DC CL13\*, DATA = XXXX\*
7140
7141 \*\*\*\*\*
7142 \* SUBROUTINE PRINT I/O REGISTER \*\*\*\*\*
7143 \*\*\*\*\*
7144 \* THIS SUBROUTINE IS ENTERED IF A DATA MISCCMPARE \*
7145 \* OCCURS WHILE WRAPPING DATA IN DIAGNOSTIC MODE. \*
7146 \* THE FOLLOWING PARAMETERS MUST BE IN THE HDB'S: \*
7147 \* HDB 00 BIT 0 = VALUE FOR BIT 13 TO BE TRANSMITTED \*
7148 \* BIT 6 = VALUE FOR BIT 2 TO BE TRANSMITTED \*
7149 \* BIT 7 = VALUE FOR BIT 3 TO BE TRANSMITTED \*
7150 \* HDB 01 BITS 0-7 = BITS 4-11 TO BE TRANSMITTED \*
7151 \* HDB 03 = HEX NUMBER OF WORDS TRANSMITTED/RECEIVED \*
7152 \* HDB 05 = 00 IF NO RECEIVE CHECK OCCURRED \*
7153 \* = FF IF A RECEIVE CHECK OCCURRED \*
7154 \* HDB 06 = BITS 2,3,13 RECEIVED (SAME PATTERN AS HDB 00) \*
7155 \* HDB 07 = BITS 4-11 RECEIVED \*

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the left page of the diagnostic program.

8912 DISPLAY ADAPTER TEST

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for the right page of the diagnostic program.



8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

7366 \*\*\*\*\*
7367 \* SUBROUTINE ROSDCS \*\*\*\*\*
7368 \*\*\*\*\*
7369 \* PURPOSE OF SUBROUTINE: TO DUMP 256 WORDS OF SPECIFIED FSQ
7370 \*
7371 \* LINKAGE: B ROEDCS
7372 \* DC XL1\*XX\* .FLAG BYTE
7373 \*
7374 \* BIT 0 - FSQ 1 COUNT INITIALIZATION
7375 \* BIT 1 - FSQ 2 COUNT INITIALIZATION
7376 \* BIT 2 - FSQ 3 COUNT INITIALIZATION
7377 \* BIT 3 - FSQ 4 COUNT INITIALIZATION
7378 \* BITS-4-5-6-7
7379 \* 1-X-X-X 2ND,3RD, OR 4TH FET INITIZ'N
7380 \* 1-I-0-0 2ND FET INITIALIZATION
7381 \* 1-0-1-0 3RD FET INITIALIZATION
7382 \* 1-0-0-1 4TH FET INITIALIZATION
7383 \*
7384 \*\*\*\*\*
7385 \*\*\*\*\*
7386 \*\*\*\*\*
7387 \*\*\*\*\*
7388 \*\*\*\*\*
7389 \*\*\*\*\*
7390 \*\*\*\*\*
7391 \*\*\*\*\*
7392 \*\*\*\*\*
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7408 \*\*\*\*\*
7409 \*\*\*\*\*
7410 \*\*\*\*\*
7411 \*\*\*\*\*
7412 \*\*\*\*\*
7413 \*\*\*\*\*
7414 \*\*\*\*\*
7415 \*\*\*\*\*
7416 \*\*\*\*\*
7417 \*\*\*\*\*
7418 \*\*\*\*\*
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7423 \*\*\*\*\*
7424 \*\*\*\*\*
7425 \*\*\*\*\*
7426 \*\*\*\*\*
7427 \*\*\*\*\*
7428 \*\*\*\*\*
7429 \*\*\*\*\*
7430 \*\*\*\*\*
7431 \*\*\*\*\*
7432 \*\*\*\*\*
5567 34 08 566B
5568 34 01 5663
556F 34 02 5667
5573 34 04 566D
5577 35 04 56E7
557B 35 01 566B
557F 1C 00 566E 00
5584 02 01 01
5587 34 01 566B
558B 0C 01 5679 56E7
5591 38 80 566E
5595 F2 10 20
5598 0E 01 5679 56E9
559E 38 40 566E
55A2 F2 10 13
55A5 0E 01 5679 56E9
55AB 38 20 566E
55AF F2 10 06
55B2 0E 01 5679 56E9
55B8 38 08 566E
55C0 0E 01 5679 56F4
55C6 38 04 566E
55CA 00 10 55E2
55CE 0E 01 5679 56F4
55D4 38 02 566E
55DB 00 10 55E2
55DC 0E 01 5679 56F4
55E2 0C 01 5620 5675
55E8 00 87 021A
55EC 01
55ED 0A
55EE 56FE
55F0 0C 59 5606 56E7
55F6 00 87 021E
55FA 02
55FB 5679
55FD 567D
55FF 0C 01 5700 5679
5605 0E 01 5700 57E0
560B 00 87 021E
560F 02
5610 5700
5612 5683

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

5614 0C 01 5622 56E6 7433 MVC ROSPX(2),R05PAD .INSERT START ADDRESS
561A C0 87 021E 7434
561E 02 7435 ROSUNP B UNPACK .UNPACK 16 WORDS OF CONTROL STOR
561F 0000 561E 7436 DC IL1\*02\*
5621 56D6 5620 7437 ROSDUP DC AL2(\*-\*\*)
5622 7438 ROSPX DC AL2(R05P02)
7439
5623 0F 01 5620 56E6 7440 SLC ROSDUP(2),X0002 .UPDATE UNPACK SOURCE ADDR.
5629 0F 01 5622 56F0 7441 SLC ROSPX(2),X0005 .UPDATE UNPACK DESTINATION ADDR.
562F 0D 01 5622 56E6 7442 CLC ROSPX(2),R05PAS .TEST FOR END OF LINE
5635 C0 02 561A 7443 BNL ROSUNP .UNPACK AGAIN IF NOT
7444
5639 C0 87 021A 7445 B PRINT .PRINT 16 WCRDS OF CONTROL STORE
563D 01 563D 7446 DC XL1\*01\*
563E 5D 563E 7447 DC IL1\*93\*
563F 56D6 5640 7448 DC AL2(R05P02)
7449
5641 0E 01 5679 56EA 7450 ALC ROSDW1,R05010(2) .INCREMENT CS ADDRESS BY 16
5647 0E 01 5620 56F2 7451 ALC ROSDUP,X0040(2) .INCREMENT DUMP AREA
564D 0D 01 5620 5677 7452 CLC ROSDUP,R05DAE(2) .AT END OF DUMP AREA?
5653 C0 04 55F0 7453 BNH ROSDK2 IF NOT, GO DUMP NEXT 16 WORDS.
7454
5657 C0 87 021A 7455 B PRINT .SPACE 6 LINES AFTER PRINT
565B 16 565B 7456 DC XL1\*16\*
565C 35 04 173B 7457 L ROSSPS,PSR .RESTORE XR1, XR2, & PSR
5660 C2 01 0000 7458 ROSDX1 LA \*-\*,XR1
5664 C2 02 0000 7459 ROEDX2 LA \*-\*,XR2
5668 C0 87 0000 7460 ROSDRB B \*-\*
566C 0000 566D 7461 ROSDPS DC XL2\*0\*
566E 00 566E 7462 ROSDFL DC XL1\*0\*
566F 1C 566F 7463 ROSSF1 DC XL1\*10\*
5670 0000 5671 7464 ROESIN DC XL2\*0\*
5672 0000 5673 7465 ROSR01 DC XL2\*0\*
7466
5674 5720 5675 7467 ROSDAS DC AL2(R05W1E\*31) .START OF DUMP ADDRESS
5676 5900 5677 7468 ROSDAE DC AL2(R05W1E) .END OF DUMP ADDRESS
5678 0000 5679 7469 ROSDW1 DC XL2\*0\*
567A 00000000 567D 7470 ROSP01 DC XL4\*0\*
567E 000000000000 5683 7471 ROEPOX DC XL6\*0\*
5684 4040404040404040 56D6 7472 ROEPO2 DC 83XL1\*10\*
568C 4040404040404040 7472
5694 4040404040404040 7472
569C 4040404040404040 7472
56A4 4040404040404040 7472
56AC 4040404040404040 7472
56B4 4040404040404040 7472
56BC 4040404040404040 7472
56C4 4040404040404040 7472
56CC 4040404040404040 7472
56D4 404040 7472
56D7 40 56D7 7473 ROSP03 DC XL1\*40\*
56D8 0001 56D9 7474 X0001 DC XL2\*0001\*
56DA 00FF 56DB 7475 X00FF DC XL2\*00FF\*
56DC 01FF 56DD 7476 X01FF DC XL2\*01FF\*
56DE 02FF 56DF 7477 X02FF DC XL2\*02FF\*
56E0 03FF 56E1 7478 X03FF DC XL2\*03FF\*
56E2 07FF 56E3 7479 X07FF DC XL2\*07FF\*
56E4 0BFF 56E5 7480 X0BFF DC XL2\*0BFF\*
56E6 0000 56E7 7481 ROSZER DC XL2\*0000\*
56E8 01 56E8 7482 ROSONE DC XL1\*01\*
56E9 00 56E9 7483 ROS100 DC XL1\*00\*
56EA 10 56EA 7484 ROS010 DC XL1\*10\*
56EB 5687 56EC 7485 ROSPAS DC AL2(R05P01+10)
56ED 56D6 56EE 7486 ROSPAD DC AL2(R05P02)
56EF 0005 56F0 7487 X0005 DC XL2\*0005\*
56F1 0040 56F2 7488 X0040 DC XL2\*0040\*

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

56F3 0400 56F4 7489 X0400 DC XL2'0400'
56F5 D4C9C1D94040D4C2 56FE 7490 R05HDG DC CL10'NIAR MBAR'
56FD C1D9 7490
56FF 0000 5700 7491 R05DWK DC XL2'0'
5701 7492 R05W1B EQU *
5900 7493 R05W1E DS 2XL256
7494
7495
0A0B 7496 OPTDEF EQU X'0A0B'
0001 7497 STG2 EQU X'01'
7498
5901 D9D6E4E340F74 D3 5917 7499 R15ST DC CL23'ROUT 7 L10/SNS MC STORE'
5909 C9D661E2D5E24 D4 7499
5911 C340E2E3D6C9C1 7499
7500 *****
7501 * SUBROUTINE LOADCS *****
7502 *****
7503 * LOADS CONTROL STORE *****
7504 *
7505 * LINKAGE TO SUBROUTINE: B LOADCS *****
7506 * DC XL1'XX' FLAG BYTE *****
7507 * 1* DC AL2(XXXXXX) BEGINNING ADDR *****
7508 * 1* DC AL2(XXXXXX) END ADDRESS *****
7509 * 5* DC XL1'XX' 1K BLOCK BYTE *****
7510 *
7511 * FLAG BYTE: *****
7512 * BIT *****
7513 * 4-3* 0 LOAD PROGRAM INTO CONTROL STORE ON A 256 *****
7514 * BOUNDARY *****
7515 * 5* 1 USE 1K BLOCK BYTE *****
7516 *
7517 * 4* 2 32XX WILL NOT BE DISABLED UPON ENTRY INTO *****
7518 * THE CONTROL STORE LOADING ROUTINE *****
7519 *
7520 * 4* 3 32XX WILL NOT BE DISABLED UPON EXIT FROM *****
7521 * THE CONTROL STORE LOADING ROUTINE *****
7522 *
7523 * 3-2* 4 FILL 4-TH 256 BLOCK WITH BOS 0 (ON ADDRESS) *****
7524 * (IF PRESENT) *****
7525 * 3-2* 5 FILL 3-RD 256 BLOCK WITH BOS 0 (ON ADDRESS) *****
7526 * (IF PRESENT) *****
7527 * 3-2* 6 FILL 2-ND 256 BLOCK WITH BOS 0 (ON ADDRESS) *****
7528 * (IF PRESENT) *****
7529 * 3-2* 7 FILL 1-ST 256 BLOCK WITH BOS 0 (ON ADDRESS) *****
7530 *
7531 *
7532 * 1* NOTE - THESE PARAMETERS MUST BE ABSENT IF FLAG *****
7533 * BIT 0 IS OFF *****
7534 *
7535 * 2* NOTE - IF A BLOCK OF CONTROL STORE IS TO BE FILLED *****
7536 * WITH BOS 0, THE PREVIOUS BLOCK OF 256 MUST *****
7537 * ALSO BE FILLED, I.E. NO GAPS IN ADDRESSING *****
7538 *
7539 * 3* NOTE - IF A PROGRAM IS TO BE LOADED STARTING AT *****
7540 * THE BEGINNING OF A 256 BLOCK (-00- BOUNDARY) *****
7541 * AND THE REST OF THAT BLOCK IS TO BE LOADED *****
7542 * WITH BOS 0, THE APPROPRIATE BIT 4-7 SHOULD *****
7543 * BE TURNED ON. IF MORE CONTROL STORE IS TO BE *****
7544 * FILLED WITH BOS 0, SEE 2* NOTE. *****
7545 *
7546 * 4* NOTE - FLAG BITS 263 IN CONJUNCTION WITH BIT 0 CAN *****
7547 * BE USED TO LOAD CONTROL STORE ONE 256 BLOCK *****
7548 * AT A TIME IN SEQUENTIAL ORDER. *****
7549 * EXAMPLE USING ONLY THE FLAG BYTES: *****
7550 * 1-ST ENTRY: FLAG = DC XL1'91' *****
7551 * 2-ND ENTRY: FLAG = DC XL1'B2' *****
7552 * 3-RD ENTRY: FLAG = DC XL1'B4' *****
7553 * 4-TH ENTRY: FLAG = DC XL1'A8' *****
```

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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

7554 * ENTER PROGRAM OF LESS THAN 256 INSTRUCTIONS. *****
7555 * EXAMPLE USING ONLY THE FLAG BYTES: *****
7556 * 1-ST ENTRY: FLAG = DC XL1'93' *****
7557 * 2-ND ENTRY: FLAG = DC XL1'AC' *****
7558 * & ENTER PROGRAM BETWEEN 256-512 INSTRUCTIONS *****
7559 * EXAMPLE USING ONLY THE FLAG BYTES: *****
7560 * 1-ST ENTRY: FLAG = DC XL1'92' *****
7561 * 2-ND ENTRY: FLAG = DC XL1'A8' *****
7562 *
7563 * 5* NOTE - 1K BLOCK BYTE AND FLAG BIT 2 MUST EITHER *****
7564 * BOTH BE PRESENT OR BOTH ABSENT. *****
7565 *
7566 * 1K BLOCK BYTE *****
7567 * BIT *****
7568 * 0 FLAG BITS 4,5,6,7 APPLY TO *****
7569 * 4TH 1K BLOCK ALSO. *****
7570 * 1 FLAG BITS 4,5,6,7 APPLY TO *****
7571 * 3RD 1K BLOCK ALSO. *****
7572 * 2 FLAG BITS 4,5,6,7 APPLY TO *****
7573 * 2ND 1K BLOCK ALSO. *****
7574 * 3-7 RESERVED *****
7575 *****
7576 *****
599F 7576 USING LIOCS,XR2 *****
7577 LOADCS ST SAVXR2,XR2 .SAVE THE CONTENTS OF XR1 & XR2 *****
7578 ST SAVARR,ARR .SAVE ADDRESS OF NEXT SEQ INSTR & *****
7579 L SAVARR,XR2 .LOAD IT INTO XR2 *****
7580 MVC EADDR,4(5,XR2) .ENTER LOADING FLAG, BADDR, & EADDR *****
7581 LA LIOCS,XR2 .SET XR2 AS INDEXING POINTER *****
7582 ST SAVXR1(,XR2),XR1 *****
7583 ALC SAVARR(,XR2),WUN(2,XR2) .INCR RET ADDR TO BYPASS FLAG BYTE *****
7584 TBN LFLAG(,XR2),X'60' .IF PROGRAM IS TO BE LOADED INTO C.S. *****
7585 JF TSTB2 INCREMENT RETURN POINTER & DETERMINE *****
7586 ALC SAVARR(,XR2),FOUR(2,XR2) # OF BYTES TO TRANSFER. IF NOT, *****
7587 L EADDR(,XR2),XR1 BYPASS THIS AREA *****
7588 SLC EADDR(,XR2),EADDR(2,XR2) .DETERMINE NUMBER OF DATA BYTES *****
7589 * TO BE ENTERED INTO CONTROL STORE 6 *****
7590 ALC EADDR(,XR2),WUN(2,XR2) CHECK TO SEE IF AN EVEN NUMBER OF *****
7591 *****
7592 TSTB2 MVI STG1K,X'C0' ZERO OUT STG1K FLAG *****
7593 TBN LFLAG(,XR2),X'40' *****
7594 BF SKIPIK *****
7595 MVC GET1KB+5(2),SAVARR *****
7596 GET1KB MVC STG1K(1),* *****
7597 ALC SAVARR(,XR2),WUN(2,XR2) *****
7598 SKIPIK TBN LFLAG(,XR2),X'20' CHECK IF ATT. IS TO BE DISABLED *****
7599 JT TSTSSW .IF YES, DISABLE ATTACHMENT *****
7600 LCSDIF SIO X'80',SIOI ENABLE ATTCH. RESET CONTR ST WD *****
7601 LCSENA SIO X'CO',SIOI *****
7602 MVC CSWORD(,XR2),X5000(2,XR2) COUNT TO ZERO. IF NOT, BYPASS. *****
7603 *****
7604 TSTSSW TBN SBYTE0,X'40' .TEST SS#01 (LOOP ROUTINE) ON *****
7605 JF TSTRST .JUMP IF NOT *****
7606 TBN SBYTE2,SS#17 .TEST SS# 17 ON *****
7607 JF TSTRST .JUMP IF NOT *****
7608 CLC CSLD(1,XR2),PRTN .TEST C.S. LOADED FOR ROUTINE *****
7609 JE ENDFIL .JUMP IF CONT. STG. LOADED *****
7610 MVC CSLD(1,XR2),PRTN .MOVE IN THIS RTN. NO. *****
7611 *****
7612 TSTRST TBN LFLAG(,XR2),X'60' .TEST FLAG BYTE *****
7613 JF TSTB0 .DON'T LOAD OP DEC IF EITHER ON *****
7614 B LOOP .GO LOAD OP DECODE REGS *****
7615 TSTB0 TBN LFLAG(,XR2),X'80' .IF NO PROGRAM TO BE LOADED GO AND *****
7616 JF FILLCS FILL CONTROL STORE WITH BOS 0 *****
7617 *****
7618 LIOCS LIO 1(,XR1),CTSTOR .LOAD TWO BYTES OF CONTROL STORE *****
7619 LA 2(,XR1),XR1 .INCREMENT POINTER TO NEXT CS WORD *****
7620 ALC CSWORD(,XR2),WUN(2,XR2) .INCR COUNTER TO NEXT CS WORD *****
```



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ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
5804 B8 04 64 7749 TBN LFLAG(.XR2).X\*04' IS'FILL TO END OF 3RD BLOCK'ON?
5807 C0 90 59C8 7750 BF ENDFIL BR IF NOT
5808 C0 87 59C1 7751 B FILLFF
7752
580F AD 01 63 86 7753 BLCK12 CLC CSWORD(.XR2).X5C00(2.XR2) LESS THAN 3072 WDS IN CS?
5813 F2 02 08 7754 JNL BLOK13 BR IF NOT
5E16 B8 08 64 7755 TBN LFLAG(.XR2).X\*08' ID'FILL TO END OF 4TH BLOCK'ON?
5819 C0 90 59D8 7756 BF ENDFIL BR IF NOT
5E1D C0 87 59C1 7757 B FILLFF
7758
5821 38 80 5A4D 7759 BLCK13 TBN STG1K.X\*80' SHOULD 4TH FET BE LOADED?
5E25 C0 90 59D8 7760 BF ENDFIL BR IF NOT
5829 AD 01 63 88 7761 CLC CSWORD(.XR2).X5D00(2.XR2) LESS THAN 3328 WDS IN CS?
582D F2 02 08 7762 JNL BLOK14 BR IF NOT
5E30 B8 01 64 7763 TBN LFLAG(.XR2).X\*01' IS'FILL TO END OF 1ST BLOCK'ON?
5833 C0 90 59D8 7764 BF ENDFIL BR IF NOT
5837 C0 87 59C1 7765 B FILLFF
7766
583B AD 01 63 8A 7767 BLCK14 CLC CSWORD(.XR2).X5E00(2.XR2) LESS THAN 3584 WDS IN CS?
583F F2 02 08 7768 JNL BLOK15 BR IF NOT
5E42 B8 02 64 7769 TBN LFLAG(.XR2).X\*02' IS'FILL TO END OF 2ND BLOCK'ON?
5845 C0 90 59D8 7770 BF ENDFIL BR IF NOT
5E49 C0 87 59C1 7771 B FILLFF
7772
584D AD 01 63 8C 7773 BLOK15 CLC CSWORD(.XR2).X5F00(2.XR2) LESS THAN 3840 WDS IN CS?
5851 F2 02 08 7774 JNL BLOK16 BR IF NOT
5854 B8 04 64 7775 TBN LFLAG(.XR2).X\*04' IS'FILL TO END OF 3RD BLOCK'ON?
5857 C0 90 59D8 7776 BF ENDFIL BR IF NOT
5859 C0 87 59C1 7777 B FILLFF
7778
585F AD 01 63 8E 7779 BLOK16 CLC CSWORD(.XR2).X6000(2.XR2) LESS THAN 4096 WDS IN CS?
5863 C0 02 59D8 7780 BNL ENDFIL BR IF NOT
5867 B8 08 64 7781 TBN LFLAG(.XR2).X\*08' IS'FILL TO END OF 4TH BLOCK'ON?
586A C0 90 59D8 7782 BF ENDFIL BR IF NOT
586E C0 87 59C1 7783 B FILLFF
7784 \*\*\*\*\*
7785 \* SUBROUTINE PRINTM \*\*\*\*\*
7786 \*\*\*\*\*
7787 \* COMMON SUBROUTINE FOR ALL ROUTINE TO PROVIDE ERROR PRINTOUT.
7788 \* LINKAGE TO PRINTOUT IS: B PRINT \*\*\*\*\*
7789 \* DC XL1'ID' WHERE ID IS ERROR \*\*\*\*\*
7790 \* DC XL1'XX' WHERE XX IS LENGTH \*\*\*\*\*
7791 \* DC AL2(M) WHERE M IS MSG ADDR \*\*\*\*\*
7792 \*\*\*\*\*
5872 34 08 58E4 7793 PRINTM ST PMS+3.ARR .SAVE ARR
5876 34 01 58E0 7794 ST PXR1+3.XR1 .SAVE XR1
587A 35 01 58E4 7795 L PMS+3.XR1 .LOAD HALT CODE PARAMETER ADDR
587E 0E 01 58E4 5A 11 7796 ALC PMS+3(2).FOUR .POINT TO CORRECT RETURN ADDR
5884 1C 00 589C 00 7797 P1 MVC PM3(1).0(.XR1) .INSERT ERROR ID IN PRINTOUT
5889 1C 00 58D8 00 7798 MVC PM4(1).0(.XR1) .INSERT ERROR ID INTO ERR HALT
588E 1C 02 589A 03 7799 MVC PM3-2.3(3.XR1) .MOVE IN LENGTH AND MESSG. ADDR.
7800 .PRINT ERROR MESSAGE
5893 C0 87 021A 7801 B PRINT
5897 C2 5897 7802 DC XL1'C2' .LENGTH FILLED IN
5898 00 5898 7803 DC IL1'00' .ADDRESS FILLED IN
5899 0000 589A 7804 DC XL2'0000'
589B 1400 589C 7805 PM3 DC XL2'1400'
589D 1C 00 65F2 00 7806 MVC ERRHLT(1).0(.XR1) .MOVE IN ERROR HALT
58A2 0C 00 65F1 0A C3 7807 MVC ERRRTN(1).PRTN .MOVE IN ROUTINE NO.
58A8 C2 01 6511 7808 LA MTABLE.XR1 .INSERT ADDRESS OF TABLE
58AC 1D 01 589A 00 7809 LOOK CLC PM3-2.0(2.XR1) .SEARCH TABLE FOR MESSAGE
58B1 F2 81 07 7810 JE MFINO .JUMP IF FOUND
58B4 D2 01 04 7811 LA 4(.XR1).XR1 .INCREMENT TO NEXT MSG.
58B7 C0 87 58AC 7812 B LOOK .GO LOOK AGAIN
58B8 1C 01 58C5 02 7813 MFINO MVC MVLG+5.2(2.XR1) .INSERT MSG. ADDR.
58C0 0C 09 6601 00 C0 7814 MVLG MVC ERRLOG(10).\*-\* .MOVE IN LOG CUT MSG.
58C6 C1 5D 621B 7815 TIO PCMK.ATTCHK .IF ATT. CHK. PRINT TYPES
58CA C0 87 63FE 7816 B ELPO .GO PRINT ERROR LOG

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
58CE C0 87 021A 7817 B PRINT .SPACE 6
58D2 96 58D2 7818 DC XL1'96'
58D3 C0 87 0222 7819 B HALT .ERROR HALT
58D7 1400 58D8 7820 PM4 DC XL2'1400'
58D9 C0 87 0216 7821 B LINK .EXIT ROUTINE
7822
7823 PXR1 LA \*-\*.XR1 .RESTORE XR1
7824 PM5 B \*-\* .RETURN TO MAIN PROGRAM
7825
58E5 0002 58E6 7826 X0002 DC XL2'0002'
7827
7828 \*\*\*\*\*
7829 \* HDBH - HDBL \*
7830 \*\*\*\*\* SUBROUTINE LISTS CONTENTS OF SELECTED HDB'S \*\*\*\*\*
7831 \* CALL SUBROUTINE BY - \*\*\*\*\*
7832 \* B HDBH LISTS HI HDB'S \*\*\*\*\*
7833 \* B HDBL LISTS LO HDB'S \*\*\*\*\*
7834 \*
7835 \*
7836 \*\*\*\*\*
7837
7838 HDBH ST SARR+3.ARR .SAVE RETURN ADDRESS
7839 ST SXRI+3.XR1 .SAVE XR1
7840 LA HDNGA.XR1 .LOAD HI HDB HEADING ADDRESS
7841 SIO X'CO'.SIOI .ENABLE ATTACHMENT
7842 J STHD .GO STORE HEADING ADDRESS
7843
7844 HDBL ST SARR+3.ARR .SAVE RETURN ADDRESS
7845 ST SXRI+3.XR1 .SAVE XR1
7846 LA HDNG.XR1 .LOAD LO HDB HEADING ADDRESS
7847 SIO X'80'.SIOI .DISABLE ATTACHMENT
7848 STHD ST HDADR.XR1 .PUT ADDRESS IN PRINT COMMAND
7849
7850 SNS HD1.HLBO STORE ALL 16 HDB'S
7851 SNS HD2.HDB1
7852 SNS HD3.HDB2
7853 SNS HD4.HDB3
7854 SNS HD5.HDB4
7855 SNS HD6.HDB5
7856 SNS HD7.HDB6
7857 SNS HD8.HDB7
7858
7859 B PRINT .PRINT HDB'S HEADINGS.
5C30 7860 DC XL1'81'
5C31 7861 DC IL1'12'
5C33 7862 DC AL2(HDNGMA)
7863 B PRINT
5C38 7864 DC XL1'81'
5C39 7865 DC IL1'54'
5C3B 7866 HDADR DC AL2(HDNG)
7867
7868 LA HDNGB-45.XR1 .XR1 = 1ST HDB POSITION
7869 LA HD1-1.XR2 .XR2 = 1ST HDB DATA
7870
7871 AGAIN ST RY1.XR1 .STORE UNPACK DEST. ADDR
7872 ST RY2.XR2 .STORE UNPACK SOURCE ADDR
7873 B UNPACK .GO UNPACK ONE HDB
5C50 7874 DC XL1'01'
5C52 7875 RY2 DC AL2(\*-\*) .SOURCE ADDRESS GETS FILLED IN
5C54 7876 RY1 DC AL2(\*-\*) .DEST. ADDRESS GETS FILLED IN
7877
7878 LA 1(.XR2).XR2 .INCREMENT DATA ADDRESS
7879 CLI 1(.XR1).X'FF' .TEST FOR END
7880 JE DOHIS .JUMP IF SO
7881 LA 3(.XR1).XR1 .NCT END, INCR. XR1 TO NEXT ADDR
7882 B AGAIN .LOOP
7883
7884 DOHIS B PRINT .GO PRINT HDB'S



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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
5C69	86	5C69	7885	DC XL1*86*
5C6A	36	5C6A	7886	DC IL1*54*
5C6B	5D2A	5C6C	7887	DC AL2(HDNGB)
5C6D	C2 01 0000	7888	SXR1	LA *-*.XR1
5C71	C2 02 0000	7889	SXR2	LA *-*.XR2
5C75	C0 87 0000	7890	SARR	B *-*
5C79	0000	5C7A	7892	DC XL2*0000*
5C7B	0000	5C7C	7893	DC XL2*0000*
5C7D	0000	5C7E	7894	DC XL2*0000*
5C7F	0000	5C80	7895	DC XL2*0000*
5C81	0000	5C82	7896	DC XL2*0000*
5C83	0000	5C84	7897	DC XL2*0000*
5C85	0000	5C86	7898	DC XL2*0000*
5C87	0000	5C88	7899	DC XL2*0000*
5C89	C1C4C4D940604 (	5C8F	7900	DC CL7*ADDR - *
5C90	F0F040F0F140F (F2	5CBE	7901	DC CL47*00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F*
5C98	40F0F340F0F44 (F0	7901		
5CA0	F540F0F640F0F 740	7901		
5CA8	F0F840F0F940F (C1	7901		
5CB0	40F0C240F0C34 (F0	7901		
5CB8	C440F0C540F0C (	7901		
5CBF	C1C4C4D940604 (	5CC5	7902	DC CL7*ADDR - *
5CC6	F1F040F1F140F (F2	5CF4	7903	DC CL47*10 11 12 13 14 15 16 17 18 19 1A 1B 1C 1D 1E 1F*
5CCE	40F1F340F1F44 (F1	7903		
5CD6	F540F1F640F1F 740	7903		
5CDE	F1F840F1F940F (X1	7903		
5CE6	40F1C240F1C34 (F1	7903		
5CEE	C440F1C540F1C (	7903		
5CF5	C4C1E3C140604 (	5CFB	7904	DC CL7*DATA - *
5CFC	E7E740E7E740E 7E7	5D2A	7905	DC CL47*XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX*
5D04	40E7E740E7E74 4E7	7905		
5D0C	E740E7E740E7E 740	7905		
5D14	E7E740E7E740E 7E7	7905		
5D1C	40E7E740E7E74 4E7	7905		
5D24	E740E7E740E7E 7	7905		
5D2B	FF	5D2B	7906	DC XL1*FF*
5D2C	C8C4C240C3D6D 4E3	5D37	7907	DC CL12*HDB CONTENTS*
5D34	C5D5E3E2	7907		
7908				
7909	*****			
7910	* SUBROUTINE LOADOP *****			
7911	*****			
7912	* LOOP - LOADS 32 OP-DEC REGS WITH OP CODES *			
7913	*****			
7914				
5D38	34 08 5D61	7915	LOCP	ST LOAD2+3.ARR
5D3C	34 01 5D5D	7916	ST	XXR1+3.XR1
5D40	C2 01 5D63	7917	LA	TABLOP.XR1
5D44	F3 58 80	7918	SIO	X*80*.SIO1
5D47	71 59 00	7919	LOAD1	LIO 0(.XR1).CPDEC
5D4A	7D FF 01	7920	CLI	I(.XR1).X*FF*
5D4D	D2 01 02	7921	LA	2(.XR1).XR1
5D50	C0 01 5D47	7922	BNE	LOAD1
5D54	F3 58 80	7923	SIO	X*80*.SIO1
5D57	F3 58 C0	7924	SIO	X*80*.SIO1
5D5A	C2 01 0J00	7925	XXR1	LA *-*.XR1
5D5E	CC 87 0000	7926	LOAD2	B *-*
7927				
5D62	9210	5D63	7928	TABLOP DC XL2*9210*
5D64	2911	5D65	7929	DC XL2*2911*
5D66	9212	5D67	7930	DC XL2*9212*
5D68	1613	5D69	7931	DC XL2*1613*
5D6A	1414	5D68	7932	DC XL2*1414*
5D6C	1415	5D60	7933	X1415 DC XL2*1415*
5D6E	8016	5D6F	7934	DC XL2*8016*
5D70	9017	5D71	7935	DC XL2*9017*
5D72	4318	5D73	7936	DC XL2*4318*

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
5D74	1419	5D75	7937	DC XL2*1419*
5D76	F31A	5D77	7938	DC XL2*F31A*
5D78	731B	5D79	7939	DC XL2*731B*
5D7A	E11C	5D7B	7940	DC XL2*E11C*
5D7C	941D	5D7D	7941	DC XL2*941D*
5D7E	711E	5D7F	7942	DC XL2*711E*
5D80	511F	5D81	7943	DC XL2*511F*
5D82	2200	5D83	7944	X2200 DC XL2*2200*
5D84	2201	5D85	7945	DC XL2*2201*
5D86	2202	5D87	7946	DC XL2*2202*
5D88	2203	5D89	7947	DC XL2*2203*
5D8A	2204	5D8B	7948	DC XL2*2204*
5D8C	2205	5D8D	7949	X2205 DC XL2*2205*
5D8E	2206	5D8F	7950	DC XL2*2206*
5D90	2207	5D91	7951	DC XL2*2207*
5D92	2208	5D93	7952	DC XL2*2208*
5D94	2209	5D95	7953	DC XL2*2209*
5D96	220A	5D97	7954	DC XL2*220A*
5D98	220B	5D99	7955	DC XL2*220B*
5D9A	220C	5D9B	7956	DC XL2*220C*
5D9C	220D	5D9D	7957	DC XL2*220D*
5D9E	220E	5D9F	7958	DC XL2*220E*
5DA0	220F	5DA1	7959	DC XL2*220F*
5DA2	FF	5DA2	7960	DC XL1*FF*
5DA3	5000	5DA4	7961	BRUO DC XL2*5000*

7962

7963 \*\*\*\*\*

7964 \* SUBROUTINE STATUS \*

7965 \*\*\*\*\*

7966 \* PURPOSE OF SUBROUTINE IS TO PRINT THE EXPECTED AND ACTUAL

7967 \* DATA AFTER AN OPERATION AND HALT. THIS IS AN ERROR PRINTOUT.

7968 \* ON -HALT RESET- PROGRAM RETURNS TO NEXT SEQUENTIAL INSTRUCTION.\*

7969 \*

7970 \* LINKAGE:

7971 \* B STATUS

7972 \* DC XL1\*XX\*

7973 \* .FLAG BYTE

7974 \* FLAG BYTE OPTIONS

7975 \* BIT 0. MASK -80- PRINT 'HDB ADDR. EXP AND ACT DATA

7976 \* BIT 1. MASK -40- PRINT 'CS ADDR. EXP & ACTUAL DATA'

7977 \* BIT 1.2 -60- PRINT 'CS ADDR & EXP DATA'

7978 \* BIT 2. MASK -20- PRINT 'EXP DATA & ACT DATA'

7979 \* BIT 3. MASK -10- PRINT 'UNEXP MICRO PGM HALT. EXP. & ACT'

7980 \* BIT 4. MASK -08- PRINT 'CURAR ERROR - EXP & ACT DATA'

7981 \* BIT 5. MASK -04- PRINT 'MIAR INC. ERR - EXP & ACT DATA'

7982 \* BIT 6. MASK -02- BYPASS ERROR PRINT/STOP

7983 \* BIT 7. MASK -01- BYPASS ERROR MALT

7984 \*

7985 \* DC XL1\*HH\*

7986 \* DC XL2\*XXXX\*

7987 \* .ERROR PRINTOUT/HALT ID

7988 \* .EXPECTED DATA (BIT 0|1|2 ON)

7989 \*

7990 \* PROGRAMMING NOTE: KEEP CURRENT VALUES IN STATUS FIELDS.

7991 \*

7992 \* ERROR MESSAGE IS PRINTED WITH THE HALT ID DISPLAYED IN THE

7993 \* HALT INDICATOR LIGHTS. RESETTING THE HALT WILL CAUSE THE

7994 \* PROGRAM TO RETURN TO THE NEXT SEQUENTIAL INSTRUCTION IN THE

7995 \* ROUTINE.

7996 \*\*\*\*\*

7997

7998 STATUS ST STATR+3.ARR

7999 ST STATX2+3.XR2

8000 USING STATK7.XR2

8001 LA STATK7.XR2

8002 STATP1 ST STATX1+3(.XR2).XR1

8003 ST STATPS(.XR2).PSR

5DA5 34 08 SFE1

5DA9 34 02 SFDD

5DAD C2 02 SF1A

5DB1 84 01 BF

5DB4 B4 04 CE









8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

6534 613E 653E 8485 DC AL2(STATE0)
6536 65E3 6537 8486 DC AL2(MB0)
6538 614D 6539 8487 DC AL2(STATE1)
653A 658D 653B 8488 DC AL2(MB1)
653C 6160 653D 8489 DC AL2(STATE2)
653E 65C7 653F 8490 DC AL2(MB2)
6540 6176 6541 8491 DC AL2(STATE3)
6542 65D1 6543 8492 DC AL2(MB3)
6544 617E 6545 8493 DC AL2(STATE4)
6546 65DB 6547 8494 DC AL2(MB4)
6548 6190 6549 8495 DC AL2(STATE5)
654A 65E5 654B 8496 DC AL2(MB5)
654C 619A 654D 8497 DC AL2(STATE6)
654E 619A 654F 8498 DC AL2(STATE6)
6550 C1E3E340E2D5C240 6559 8499 M7L DC CL10\*ATT SNB RD\*
6558 D9C4 8499
655A C9C5E3D940D7D5C4 6563 8500 M6L DC CL10\*INTR PND \*
6562 4040 8500
6564 C1E3E340C3C8D240 656D 8501 M5L DC CL10\*ATT CHK \*
656C 4040 8501
656E C1E3E340C2E4E2E8 6577 8502 M9L DC CL10\*ATT BUSY \*
6576 4040 8502
6578 C1E3E340D561D5C4 6581 8503 M8L DC CL10\*ATT N/RDY \*
6580 E840 8503
6582 C9D5E340E2C24D7 658B 8504 M4L DC CL10\*INT SB PND\*
658A D5C4 8504
658C C1E3E340E2C24C2 6595 8505 M8L DC CL10\*ATT SE BSY\*
6594 E2E8 8505
6596 E7E740C9D5E3D240 659F 8506 M1L DC CL10\*XX INTR \*
659E 4040 8506
65A0 D6D740C4C5C34240 65A9 8507 MOPD DC CL10\*OP DEC \*
65A8 4040 8507
65AA E4C5C5E7D740C1D5 65B3 8508 MB0 DC CL10\*UNEXP INT \*
65B2 E340 8508
65B4 D5D961E4C3404140 65BD 8509 MB1 DC CL10\*NR/UC \*
65BC 4040 8509
65BE D5D961E4C340D4C6 65C7 8510 MB2 DC CL10\*NR/UC OFF \*
65C6 C640 8510
65C8 C8C4C240E2D5E240 65D1 8511 MB3 DC CL10\*HDB SNS NG\*
65D0 D5C7 8511
65D2 C2E2C3C16D09C1C1 65DB 8512 MB4 DC CL10\*BSCA-READY\*
65DA C4E8 8512
65DC C1C360D5D660C1D5 65E5 8513 MB5 DC CL10\*AC-AC-INT \*
65E4 E340 8513
65E6 F1 65E6 8514 DECONE DC CL1\*1\* \*
65E7 4040404040404040 65F0 8515 BLANKS DC 10CL1\* \*
65EF 4040 8515
65F1 00 65F1 8516 ERRRTN DC XL1\*0\*
65F2 00 65F2 8517 ERRHLT DC XL1\*0\*
65F3 01 65F3 8518 IPLFLG DC XL1\*01\*
65F4 0000 65F5 8519 UNFRTN DC XL2\*0\*
65F6 0000 65F7 8520 UNPHLT DC XL2\*0\*
65F8 4040404040404040 6601 8521 ERRLOG DC 10QL1\* \*
6600 4040 8521
8522
6602 C0 87 64C2 8523 ELLINK B ELPORT
6606 C0 87 4D37 8524 TERLNK B LNKTER
660A E2F8F0F0C6F0F0F0 6613 8525 ULGG1 DC CL10\*SB00F0000-\*
6612 F060 8525
6614 D4D9C5F0F0F1F1F0 661D 8526 ULGG2 DC CL10\*MRE00160E-\*
661C C560 8526
661E D4D9C5F0F0F0C5F1 6627 8527 ULGG3 DC CL10\*MRE000E16-\*
6626 F660 8527
6628 C3C1E4E3C9D6D540 6652 8528 DC CL43\*CAUTION - INCORRECT UDT AND/OR HARDWARE FOR\*
6630 6040C9D5C3D6D0D9 8528
6638 C5C3E340E4C4F340 8528
6640 C1D5C461D6D94C8 8528
6648 C1D9C4E6C1D9C240 8528

8912 DISPLAY ADAPTER TEST

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

6650 C6D6D9 8528
6653 40D4D6C4C5D342F2 6676 8529 UDTMSG DC CL36\* MODEL 2 SUPPORT CAN CAUSE THIS HALT\*
665B 40E2E4D7D7D6D5E3 8529
6663 40C3C1D540C3C1E4 8529
6666 E2C540E3C8C9E240 8529
6673 C8C1D3E3 8529
8530
8531 \*\*\*\*\*
8532 \* PROGRAM EQUATES \*\*\*\*\*
8533 \*\*\*\*\*
8534
8534
5A00 8535 SAVARR EQU RETBR+3
59F8 8536 SAVXR1 EQU RESTOR+3
59FC 8537 SAVXR2 EQU RESTOR+7
8538
0001 8539 XR1 EQU X\*01\*
0002 8540 XR2 EQU X\*02\*
0004 8541 PSR EQU X\*04\*
0008 8542 ARR EQU X\*08\*
0222 8543 HALT EQU X\*222\*
0080 8544 SSW10 EQU X\*80\*
0040 8545 SSW11 EQU X\*40\*
0020 8546 SSW12 EQU X\*20\*
0010 8547 SSW13 EQU X\*10\*
0008 8548 SSW14 EQU X\*08\*
0004 8549 SSW15 EQU X\*04\*
0002 8550 SSW16 EQU X\*02\*
0001 8551 SSW17 EQU X\*01\*
0008 8552 SSW1C EQU X\*08\*
0001 8553 SSW1F EQU X\*01\*
0002 8554 SSW2E EQU X\*02\*
0001 8555 SSW2F EQU X\*01\*
0200 8556 MODTYP EQU X\*200\*
0208 8557 SBYTE0 EQU X\*208\*
020A 8558 SBYTE2 EQU X\*20A\*
020B 8559 SBYTE3 EQU X\*20B\*
020D 8560 SBYTES EQU X\*20D\*
0212 8561 TEST EQU X\*212\*
021A 8562 PRINT EQU X\*21A\*
0216 8563 LINK EQU X\*216\*
022A 8564 LOAD EQU X\*22A\*
021E 8565 UNPACK EQU X\*21E\*
0020 8566 P1 IAR EQU X\*20\*
00C0 8567 IAR1 EQU X\*C0\*
00A0 8568 IAR2 EQU X\*A0\*
8569
8569
0049 8570 IN32CA EQU X\*49\*
004C 8571 BSCAEM EQU X\*4C\*
0058 8572 NOTRDY EQU X\*58\*
0059 8573 INTPND EQU X\*59\*
005D 8574 ATTCHK EQU X\*5D\*
005B 8575 CSCHK EQU X\*5B\*
005E 8576 FETWRD EQU X\*5E\*
005C 8577 FETADR EQU X\*5C\*
005A 8578 HDBCHK EQU X\*5A\*
005F 8579 BUSY EQU X\*5F\*
0048 8580 HDB0 EQU X\*48\*
0049 8581 HDB1 EQU X\*49\*
004A 8582 HDB2 EQU X\*4A\*
004B 8583 HDB3 EQU X\*4B\*
004C 8584 HDB4 EQU X\*4C\*
004D 8585 HDB5 EQU X\*4D\*
004E 8586 HDB6 EQU X\*4E\*
004F 8587 HDB7 EQU X\*4F\*
0058 8588 CTSTOR EQU X\*58\*
0059 8589 OPDEC EQU X\*59\*

PROGRAM 1 IAR  
INTERRUPT LEVEL 1 IAR

TIO 32CA INST.  
TIO BSCA/3271 EMUL. INST.  
TIO NOT READY  
TIO INTERRUPT PENDING  
TIO ATTACHMENT CHECK  
TIO C.S. DATA CHECK  
TIO C.S. WRITE DATA CHECK  
TIO C.S. ADDRESS CHECK  
TIO HDB/EXT CHECK  
TIO ATTACHMENT BUSY  
LIO/SNS HDB 10-11  
LIO/SNS HDB 12-13  
LIO/SNS HDB 14-15  
LIO/SNS HDB 16-17  
LIO/SNS HDB 18-19  
LIO/SNS HDB 1A-1B  
LIO/SNS HDB 1C-1D  
LIO/SNS HDB 1E-1F  
LIO/SNS CONTROL STORAGE  
LIO OP DECCDE REGS

8912 DISPLAY ADAPTER TEST

8912 DISPLAY ADAPTER TEST

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ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
0058 8590 MSDAR EQU X'58'          LIO/SNS CRT LS ADDR REG (CRTAR)
0058 8591 SICI EQU X'58'           SIO IMMEDIATE
0046 8592 SION10 EQU X'48'         SIO NON-IMMEDIATE LINE 0
0049 8593 SION11 EQU X'49'         SIO NON-IMMEDIATE LINE 1
008C 8594 BSDAR EQU X'8C'          LIO/SNS BSCA 2 ADDR REG(BSCAR)
8595 TREP
8596 * SECTION 891 - ISYS/3 DISPLAY ADAPTER TEST
8597 TREP
8598 *****
8599 TREP
8600 * SSW 10 ON PRINTS HDB'S IN ROUTINE 04 AND 05 *
8601 TREP
8602 * SSW 12 ON PRINTS CONTRL STORAGE IN ROUTINE 07 *
8603 TREP
8604 * SSW 17 ON BYPASSES CONTROL STORE LOAD FOR A TIGHT LOOP WHILE *
8605 TREP
8606 * LOOPING ROUTINES. *
8607 TREP
8608 * SSW 1C ON CAUSES ROUTINE 24 TO BE SKIPPED. *
8609 TREP
8610 * MANUAL SELECTION ROUTINES- *
8611 TREP
8612 * ROUTINE 41 - C.E. MANUAL MICROPROGRAM *
8613 TREP
8614 * ROUTINE 42 - C.E. TEST BOX CHECK OUT ROUTINE *
8615 TREP
8616 * ROUTINE 43 - HDB AND CONTROL STORE DUMP UTILITY *
8617 TREP
8618 * WARNING - THIS SECTICK DESTROYS THE MICROCODE REQUIRED FOR SYSTEM *
8619 TREP
8620 * OPERATION. RUN SECTION 893 TO RELOAD. *
8621 TREP
8622 *****

```

```

ERR LOC OBJECT CODE   ADDR STMT SOURCE STATEMENT
FFFF 8624 END

```





8912 DISPLAY ADAPTER TEST

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains cross-reference data for symbols like ERRLOG, ERRPOE, ERRPOS, etc.

DATE 07JUL75 25OCT75 15JAN76  
EC NO. 825023 825032 825034

PROG ID 0891-2  
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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains cross-reference data for symbols like HDNGA, HDNGB, HDNGB1, etc.

DATE 07JUL75 25OCT75 15JAN76  
EC NO. 825023 825032 825034

PROG ID 0891-2  
PAGE 73A





















CROSS-REFERENCE

SYMBOL T LEN VALUE DEFN REFERENCES

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

OBJECT CARD LISTING

THE CHARACTER INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

```

GBK GBD PN 42 34254 EC 825034 SYS/3 DISPLAY ADAPTER TEST 84228422 ..... 89120000
T+-Y: SJH B/A M QU H & D BY4 9 M#1+0E+2*B&K#P /OYU+ DBC*BGBS3 /OHE JQHT(IQ-C2 IQE2 &-H89120001
T+-Z5||AU5<HABUI JD ? /5_2 J_-Y_E 1D%BG /$AP-Z,OHY HR<ESBW?2/O-A00Z ,2Y* OH)$*-<EQD~ /OH 81489120002
T+-DOE_X09+( aIE 0:|TO|H5<PN84C T2|QB %EOH*BF-D &B03 /OD_6|S084C 02UCB8Z|A&+|I5ZF HB,M 18089120003
T+,,OH*H2*FIB_P AS-,/OQZH#*F<B7X /OHOOH)$*YDHQP# /OHOOH)$*YHJQH~ /OHOOH)$*Y<HQR, /OH 3-089120004
T+-ZWE%BG /DDDOB GOH*BE%BG07HEDOB GOH*BE-< B63 /OH E J .E33*B5730HC 30< BK %-<E (QTS 1B2 %:889120005
T+_/2YDHC- HEY .OH*.G*(Q-C7*B5% a %_SOHD.F*(QOCE QCOH+ %_SO-? % F255 OH*BE-CR5>L T&| EC489120006
T+->*24CH1<I 2|P 180& C-. /OHE KH (/2BGPL-< &5-CN4 a %5-| A/_30 Q% a FF925T 0-D<667 %NJH 6H*89120007
T+-7PNJ.AD >,OH) %*USQH.AP-750N0 .L3%QSCAPE>| A /%|10/CO C- 10&7 OC- (2EY.|K (2< AB20 8&89120008
T+-OK25T C~NDVM KON4.:%BGCE*%6F 00HD(228GPLT30H 1K 55<D-(#CEHCNU OK 7>| %QC3*Q% ( 64 35M89120009
T+-1(| 7>2YDS| 0 <QC300%*( 7.C:7 2-JD( 7%&#2 L 2CE1-| /_00 CEH <Q OACN(EB00AP=0 (8< 58889120010
T+-2H/56V-& 0 AP=Q(|%BGPED |% | A/_|(Q-1(QOEO A*P2/2J* PG22Y* )P E1:-HGEVOA%:, 2/02 :J89120011
T+-3CP E1#7HGBC3 %COA* PG2-D-7*EA 1:-%32/ DP-E1#V8 .-)%L2*%AB9% :% 2-D/P:|*322 DP E 12T 1ZU89120012
T+-3= E%WONY(714 AP=R12YD<OH*(72B GPED DE P-AP958 A9>99%|2D J* PG W~M*P4 JDOONY(235 %Y K8*89120013
T+-492Z +:AC20AA 897UE2% (0%V) PG 54HDGPE&A0#(RACV4 %*T&-JN) GC24HD *PEA0#_BAH7UE27H &CUO :EM89120014
T+-54 -IEB70 a%( Q-(86 C5B8-| -&8 +2Y*6 ADVOD%#2 B / J %CR5>L T&|J 5_)-1<PC&|1 00%& R-489120015
T+-67&EA 2<LBE+| E8>| L-C00|GFP-( QOCAHP=Q( N%MCN7 -&HOC D|H05|0H) 1ZQ KDAG /5_2C/D + % :0489120016
T+-7D/O>7OH)$*/ &QD~ /04&| A/> 4 P=N-92BAC(%% E% VM_U( E%VP=% -E7 /|1|/> a P=ND6*B GC(* 40-89120017
T+-8V %BH 5_1 1<PC5%LE&&8A2|1 U6*ME AGPOH*BF-D VDBC /548C D|%- #| 1*30 Q%#2 FF 8| %L 89120018
T+-9-QS30<CB &2 CC~%NDVHKON-&#B G07HIF6BSONB+S2E *CY22*6FOON4+NLO 0&C30HE2 70<NU (2 8 7 89120019
T+-:8 700-%H 7 00 D+P|100 7%NJI NDZE)CX% /1A |-% /%<BADD0 /548255 <Q-(QTBHC:01S 5 RCH- 1 89120020

```

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+--#CC:88B0#611' /\_04AC:0(8?HAHTO <C?Q22FF7C& (:07 \_2YDJC& (# 7>6-D 0| 4+'T0|0\$\*< # YC70 -J889120021

T+--2JC D(M5Y.C E -9-7XOH)1ZQD < N\*MC:# /56V- C \*\*30 Q\$-30HC30KA \* PG62Y\*UP E1#\*H GGN0 :8H89120022

T+--< PG,2Y\*OP E 1#-HGC50A\*-G2/O- 2\*0\*7P E1272H.70 \*PX\*\*|H&AEB8\*-E : 8\*V-Q274 E>P G Z270 NY289120023

T+--GSE18\*\*L2U J \* PG3< A-9ZEED- 1 K\*\*HAC8BGEI /56V-AD \*\* EB N=N : ;X1:-\*42/ DP E 1:P4 RSU89120024

T+--BT5-&AESAO/A <+H BB7HECX-&22 EDHJ9D|| DABOPEE 1\*\_BAA54 \*+\*E-89 1 GCD4HDP&A0#(B AGE4 KQH89120025

T+--GC14HDT;JC 32/ +L G3C=Z2 IL 30HC&/O 'E-YCOHE 1:7HG&ED-H& DVN ND7\*\* -H \*\*\*\*\* C 16|Q --689120026

T+/ 89+( 'MCO56C D1\*( '4'SAIDA&&KT DOUCT1:-T&D722FC 31V730< OSE\*MC&E -9-\*#0HDBE-OACNK 1=2 6-H89120027

T+/A3/56V-AH0<\*B G07H&D&8A0H\*+\*B G07H&DFAGOH\*|ZTO Q\$-( E\*VP=\$ -E\* \_C-A-9M\$RC&A-9M\* WOHND 1&-89120028

T+/B>DCY2\*6F8COA -9N\$ROH\*|&L&HDJM 4 JD10-DJU-(Q0|H GC3&HDJM4 JD10-D J0\*(Q-C&AD(-OSAD P<HU 71489120029

T+/CZDJUOS/D\$<HX JGLB<DJ22TJD/<H8 JM3B|CKP /OHE-EO J5<BG /DA/(E&O-D JH&HBDJQ4 JCL( H 6#2 N,Y89120030

T+/DU/OH; & \*\*\*\* C S -E\*OG2-&-K &I /1C/OH\*BFYQ6D\*~ B & \*\* O-H <BG \*\*\*\*\* P1Q89120031

T+/E- <GD1(V QDC 22DC22MC22UC224C 2'DC2'MC2'UC2'4C 2=DC2=MC20MC20UC 204C21DC21MC21&G D1(U '1Y89120032

T+/FE&FA 2\*A 2\*E 2\*MI 2\*( 2\*J 2\*M 2\*R 2\*) 2\*/ 2\*V 22E 22I 22( 22J 22N 22\$D0;|A&FA '9\* '0 89120033

T+/GNE+-X&+-X&+- X&+-X&+-X&+-X&+- X&+-X&+-X&+-X&+- X&+-X&+-X&+-X&+- X\*2D0UCC5\_PT1)P T8- :9Y89120034

T+/HE 0 DY- /OH E JUK/<HAD;|2 FJ - QHB255 25T <M2 (QTA|P=R( FJ-97H AKCO Q\$\*2 FF8| A />L4 #A489120035

T+/I. JI.OHDKHC3 "QST /1ID<N-(QTA IDYQ| AHFN\_U( AH FP=\$ -JI |||/><8 GDU&2\*6F90H)1Z&& L \*\*\*\* :6M89120036

T+/H+L-AUG-+ QI EB54A-YL2-&\*1D 5 54H\*JOH\*BE- \*\*\* &G R5>LT&|R 5CXA6HC R1\*| 2)PC6MCT1: T \*\*\*\* +3Y89120037

T+/AAO P|<BG /Y AESUP|AAD\$30 Q\$\* 2 FF8| A/>-(Q-|1 QOCEQCO.30HC30< 00 72255 25T <N- 10-< =Q089120038

T+/20HC30< 00 7 >C&D(|# 7>|A&LH33 \*Q\$-2-KH( '7,C:4 2EJ<T|A/\_HAD&4 C:0(|?HA<COOD2< 2C&D #EQ89120039

T+/<7\_00 DIMLH2 ANX(O\*00AP=Q(|<B GPENA \*\*\*\* C E-9-7 >OH)1ZM \*\*22 FF 7|< LLC3 D9D&FAJ .|H \*\* 6&889120040

T+/12H\*8 - ( I O\*28GE&D 255 25T <D200TOA&E3H10A& GON8OU\*E\*EZDOL5\* W&CA-9/8B0 DO>08 'EXH Q\$\*89120041

T+/+\_0-2+ JEQNKG S -D4 VR3C&E0\*5S VO &LN-(O-|100<H B \*\*\*\* 4 VR30-EP \*B GE&D <E/-9UOA N# W4-D 59Y89120042

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/|Y &EID#0| N# WEZT2-RH< JJIEZ- 2 FF8| A/>L--NH# DAJFC&A-9N\*WOHD L9C3\*Q&T /1JF( I O\*04 KIU69120043

T+/&T NR3.\$3 JJ F|&E-9&BAEDH' V# WOHDM&T4DP=\$ -JJ B|&/-9&BAEDH'DE# WOHDM&T4-P=\$ -JJ B|H \*\* NY889120044

T+/J;P=\$ -JJB|QA -9&BAEDH' E\*WOHD H&T3\*Q&T /1JF||' />8GPEN \*\*\*\*\* C-D DWER18-HA( IO\*34 NX< #/Q89120045

T+/KRO DLY2HANOD \* NR20H&H-C-- -- UA+TOH)NR6C /1+ T|&IO\*2BDEIU8H H HOI LY2BGNO) OH\* LY34 MS289120046

T+/LM 5R20H&M&T- --, UA+TOH)NR2C /1+T|&JO\*2BDE<3 8H HHOI LY2BGND\* 6OH\*LY34ENX. /AL U+B \*\* 9ZM89120047

T+/M| --, UA+TOH) NR83 /1+T|&RO\*2B DE|48H HHOI LY2B GNO|<OH\*LY34GNX. /AMO+8 BB&B&D:| /5M 2L 89120048

T+/NHR23 /1+T|& 0\*2BDEL\*8H HHOI NH2BGNO\*\*+ HHC<B 6EY7 /1+T|&VO\*2B DEN 8H HHOI LY2B GNO\* 5L089120049

T+/DES2BGD:<BVR 20H&NEL-- --, UA+ TOH)NR4, /1+T|& 0\*2BDEQH8H HHOI LY2BGNO\*DOH\*LY34 <NXH J0&89120050

T+/P OHEN-T-- --, UA&E(OH)NR1, /1E (C&E0\*5\$&0 &LY3- --, 2U P /5NX<CH ANOG /1&HECAQP=R < &D =9089120051

T+/P#P=\$K &.APJ+ 2C&E-9/EQOHND6<B GD#0+ JEQNXG\$ -D 4 VR3C&E0\*5\$)0 & N>T-- --, 2U P /5M X&<H KZ089120052

T+/Q6 N\*AOH\*02S ODE\*ML DAP=\$K &. APJ+2C&E-9/EQ2YD DOH\*L? 2AEZ/O\*H B L&BNX<( NR3N# \*AAQ OHU89120053

T+/RIAC-- --, 2U P /5NXH<HANOG /1& HDCAQP=R< &E-9\_H A &EID#0| N#WEZT 2-&L /1+2C-DOWER 18-H 6C889120054

T+/E& L&BNX<( NR 3N>G AAR(+B BB7H &A\*BGNO\*6OH\*OX\*8 GPEN-ED \*\* OH\*0036 \*\*M\*2 &-2&ER?OH\* L+T4 1#489120055

T+/&X&ER?2-D&|BA 0&2BGD3, /56VAAY \*\* |(Q-<BG /Q4BA\* 9( DP<L&E3M4AA\* 8|&J093MAE3XK &D 4 \*J\* NI&89120056

T+/S<LS N#2UA < JEQN>\*< NR1N>- /1\*0+DA0\$\*H&D 0 AEZ-(O&OANXE092B GEZY8HER?2Z <C E O\*NO Q8D89120057

T+/|1? 0AEZ/O93M DE3?B & O-H <B G \*\*\*\*\* - FL3 /OH E K<QD2HAFD73QHC 30< < J-8FF < J/ OFE& NL\*89120058

T+/;QC DQ\$//OC D P=A/SC DQ\*EY(C D Q\$//QC DP=A/UC D Q\*A/EC DQ\$//2Y\* KC DP=A/MC DQ\*EY EC D \$2Y89120059

T+/LFF8QPT&QFFB ( J/>FGC2 &10EY HC0DQ\$//+C&DQ\$VY HOHEPX-(Q-|Q8<E )FG4< J/&FE.AUA/ 1L)U KQ289120060

T+/+ A/+C-DQHA/ +OB P3?(QOCAQP=Q ( N#WE\*2-ET /56 VDAO \*\*<B60J56FF\* Q\$ O|F|ORCCYAN#4 8 &Y :D489120061

T+/IC|H&B&BGN|8 :P |2/O4<C1T&FJC /5L=G5 CC&E-9VN 6ONDB&3BG /DAMJT 2OH\*BFYH,FL? /5= \*OH\* &A289120062

T+/SD /Q \*\*\*\* D | AMH&S\*5G\*HQAK\*5| \*\*M|1J7E1\*H\_1\* 5 \*M < \*\*\*\*\* OH)S\*S JQ-| /1-/OH)S\*SD &QD\* E3289120063

T+/S\*OH\*P21X09+( =DCM2\*|R5&|05;| R5\_|11)V 1)PAO\_| E&EA O\_\$\$O2TE0\*1 22TE&<604' |09IX N14 LH489120064

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/T:QDCU1+( 8XG Y8UC60:IA4XGNOMA (1XPAB4\_0'SD1MC 2'PC7PHCS2(\$U4QJ 6DA 6DA 6DA 6DA 6D ED89120065

T+/U56DCN5>( 0XN 2)PS8AGL4@PDEDA 6DA 1\*XT2<PRE+L DB4C06MCF1\*GT9(X EE+|IIMCU54CM0:/ 0XN OE-89120066

T+/VO6+SR5\_PG8E RDZHAFND\*ANYBL3B G /YAFNZFOH|RFH\* RYANZ855 \*M-O<MU (N8BGN|8VM L3OH OKE8 1989120067

T+/M,9/4AP=QO2YD HOH|)ZK W (8OKN" WGE8-9UL2-ET /56 VHB|ND8BG /\$0=MA 8\_<E&AE DU L&E DB- 3:089120068

T+/XWFW7B JW"6 N E+A" /OHE JVEJ3B GOJSCF:DEE?(Q-GE HH\*BGN|8DMDL /OH O2<E O\_SC H E&IO CH H 2C89120069

T+/Y/U+DJ&I4 W&F HBN HU \_EB/E X&H R 9&E8 =EDV JDMB |A|UEVA)&EZ RMA- JEI4FW&MGV |UBA 6G1D \*8D89120070

T+/Z\*E14MV&MOIN UUB|E|E X&DNB9- 8MB>E.V\_DNB|CIM (MC(E&Z 5MC&JEI4 +V&=Q+V 9UC1E+1A XCA 21 89120071

T+/DPMC:QENA VDI 6&ZD&ME. A.60-D E-AOEOT/XOH\*BF-D ROUS /5UQ-1,YF?P 3OH 1K 5S<MU(N3E HCN\* :0H89120072

T+/,KOH|M"5'EA?( Q-CAHP=Q) N"=|H AB<BGP&E-CEOD<OV -9/4AP=RI@YDHOH| )ZK 1"=8OKV"WGE 8-9V4 0,089120073

T+/Z(@YDHOH|)ZK 2'E" /OHQ2<I 8X. NQEN/DWHQ5NU'OD 2M Q< A\_VO-D8B10 EOT/|OH\*BF-DROUS /5U 3T89120074

T+/\_HFH&O1\_U855 <MY|OLEICN- /5L =(|V D855 <DZ-9/4 AP=Q1@YDHOH|)ZK 7NEYOKN"WGE8-9UP 2-6- 2589120075

T+/>COH|)ZK 8AHC /OHQ2<( 8X.F|H, EN\*.807'EA 4 F'L B J\_+G NE+D" /OH E JVEJ3BGOJSCF@Y 84" < "JY89120076

T+/>OH 1K05R<M1 068BGN|82M L3OH OK5"MG&E-9TG2-ET /56VHC9N0TA<P=Q 1 N"=MJ-HAB<BGP&E -1"8 N9089120077

T+/79 <BG /\$01DA 2\*(6NP;D;1'9 E DC- \*<ZHAF=U\*ANY 8F\*BG /YAFNZFOH| RFH\* 102OH|M"UI 6E2 JY89120078

T+/04/OHQ2<N 82. N:VN8D7.CX&BR RM B=V2) 9UDV \_EB78 :X&ONAZ-E8 "8-ZO LMAHQEN MVA)&EV PCO #0889120079

T+/17GI,8 J1MG N E+AX /OHE JVEJ3B GOJSCGFH\*W\*BGN|9 DHA? /OHQ2<STO8S R:VN8DX28-\$5=(P' AS-4 3MM89120080

T+/2DX&BR RMBS-2 1 9UDV 'E CYX+X&D NAZ-MMA+.C90PMAE QFN QVA \_EFV SD \*:\*HAGH@\*ANY8F\*8 G /Y H.<89120081

T+/3V JVEJ3BGOJS CG<U\*:<BGN|9HM " /OHQ2-A E+-R\*" 1 G.LY-6S490GM E S =HXZ \_EBD<B8'+ \*C5 R \*89120082

T+/4-CV |D& )<KH AG18\*ANY8F\*BG /Y AFNZFOH|RFH<|FA4 7OH|M"U/&C8BG /\$ 1&MCC2)V=PG'QIYE 1P.8 5:89120083

T+/58AZ4 W&FN ,8 AX \_EB,2+V 9&CR4 CH 2K A610-D|LJO EOT-ROH\*BF-DROUS /5UQ-15XGQT /5L =JV \*Y489120084

T+/6OD<BG /\$12UA 0&V&DX578.S) IU AV&.8DZ0IM T\_-94 CV 5&C+57XAA&C5 6DO :U8HAGRX /OH E K\* 0.+89120085

T+/7JG;8 /5UQUJ7 7GT. /5UQ8/83GV. /5UQ\_A9LGX. /5U QDA93GZ. /5L=LV |OH\*BE\_X09+( 2-( O\_U 9 089120086

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/8<E(LI0'X0&(\$ PE+|E8>(:&|GK&G DI(XE8>.EBUA&DE AM I& 3HEM M3A5 GM /&BN HM \_&CE (M 8 ' :H89120087

T+/9GM '0 GDA\*-I 3 7&D)&N6AX\*G; / 9BPYH;0\_2CG4(-9 \*C3DAMBEJ CHBM&I J 5DDMENJAVDG<EZ JBL< 2I089120088

T+/:BB5D.M&1JCND +ME'K EHA<O|K 5H D< RKAVHGM-/KBNH HM-2CVH|< 'KC5< MOEL T DMOJLAN< F<E- 5B89120089

T+/:MO/LBN<H<-1 LCE<(MO9LC1& G2- B J:Y& NE+B. /OH E JVEJ3BGOJSJG8Z - 8BGOJSSGO<-I8B GN|8 MEQ89120090

T+/#8ME 8OH\*BE?G 4&<XN07Y |OJ6 ED :/B\*A5 F;OE7BVD F1 \$GA F4 \$E|E Q>->D5 KF4 \$EA F4 QHH89120091

T+/23M&C D IO&MAZ 6F1Y&F/ EDAY&F/ EDAY&F/ EDAY&F/ EDAY&F(-) JDJM 6:LB J2&G N E+AU N8M89120092

T+/'>OH\*BF-DROUS /5UQ-1'OG:| /5L =MV MOH\*BE?G5&DC L6P+D\*NM? ==DX R 6AK2A#50\*BV IM8 TDZO 6K089120093

T+/:ZCV (|)-2VD+M NXA(|DX\$=IS|U"90 QMA\*ME>EDXA1&F2& OI/LWNRO/MB U(SQ 09DD\*IV VMBQO A" VO-D )889120094

T+/'>U#U\*ANY8F\*8 G /YAFNZFOH|RFH\* -41\*UOH|M"VJ&B<B G /\$1'UCT8\_N 8MG SK+(H9D7VL>RDBE 6M - )/<89120095

T+S -EO -&ZHAG\*P /OHE J4-I\*8GOJS CHBQ-&BGN|9OH 7 /OHQ6)S84C1'4C 88ZR/8>.N&E(LI0'X O&E(Q )D889120096

T+SAE54CT1: .TD / 88M|SK><KADHGM Q LAD<HM U&BD.U&=M 6CJ- HM. /OHE K\* -;<BGMGR5>LT&|G 8&CH JT-89120097

T+SBNO(| 5<XC6)R 5\_) 82PS859 @|I 0\*LD6+PS8ZPSOH| RFID-D8CVOH|RF.H -9SC?OH|RF.E-2BD 8OH\* :1889120098

T+SC&QJSYHJO/M\*8 GN|84M/P /OHQ\*6G 6 5 BZN=\*AV E4 / 6A7QF\_V=\*CE ..DG 6C5 +8N:EDV J\* B OP20 98M89120099

T+SD.EV N4&A&E8D <XA\_EF,A-XA9&G)H |4&IJ K1:3|A&FEH M-EK VHCH-JKANH FM-|KBEHM-ZK85H <M-4 NJ089120100

T+SEFM-8LDNH&+1+ 3PZ8NM/JKEN< MOE L V<CMOJLAN<FMO) LBE<IMOZL85<<MO5 LCV<|M1AOC#A-X1N LEG E8489120101

T+SFADZA-X1VLF(M JM1YR BHYOH\*BF-D MHPP /2E66)S84C 1=M\_42M 5\_) /4'V 5\_- /5UQ-2FHH) = /56 63Y89120102

T+SF2\*TZ&H8BGH;A 6AP\*N;BN9(P 8\*EA 2HSHFIK\*VS8OZAQ2 5AZ (|\_K;E<C8OHUAF 5DR LCMO'CI O|VA 7MP- KLN89120103

T+SG7MXVLI&UUSBM X1&Q+J88<UBF5AZ T\_K;E|8OHUB;5DR ZNB,3OH 1K 5O25T <M-(O\*8GOJSCH-M 812 'S&89120104

T+SH2/5L=|E KOH\* BE>8DX (E >ENX R 6ASA X V&B#EAX 1 6B.AOX 'E<E1XAI 6DM KF- 52\*BG /Y AF2H RC089120105

T+SI\_M8BGHV|R5>L TE|G&E<GD1(XE8>. 15\*) 0\*.09\*N @). /5UQX2I'MY, /5U Q82H.HZQ-|I'MR<B GN|8 2CU89120106

T+SHYOE E+ HHC<B 6 /\$ /2HP5 C& ) 84 |6A( E4 R7\*7- =M J& 7-'M P /5U QX2.CH\_ /5UQ=2. LH>H MSM89120107

T+S.TH<BGOJTMH>< 82D 2\*5MUOH|M"WE 6AZ86 /\$Q ( A4. 6 ' D4 P&A GL A < MOBL (<ADOEL R <A7Q 08089120108

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+S<: E CM MODI- FM NGA/Z IH/ OH E KMTI\*BGH2SR5>L T&IGB&<.R&GN1DC 801( 5\_-SPUCA4\*( 0\*E E9I89120109

T+S(RI(XEB> -8-0 AIHY(O7IQ-10OCE QIHO+ KKHO-Z( KK H.\*C K<20H)RFH T9S&T&ST <M&UI&O AIB\* 5Z889120110

T+S+MCOH: K&X+ H HC<B&H60: S&XCMO UI3YANM4&SNUOH) M\*VI&E04AP=QT-ZB A /QOKZKF&S<D& US< H489120111

T+SII/OH: SKFID< < 2KDID| /OH: SK HIG. /OHE-TUUCQ<B G /DBDSJ2OH\*BFYH KIH&< 6QAIGH< 6P \*IHE E0&89120112

T+S&H|EIV&TOSR-G /6|=OH\*8H/J\*OH\* BES-RIV8XP&SO=HB &F.QOU :7E9 IMA2 &FAOQ: &+&D--AUA- ZA9 :J&89120113

T+SJEE--BUA-ZBI QMA)Y-BUY(T)&F2U OE3A&EBO - CB6\*G NO& / 6\*P62: .T1)V 8\*R 0\*LD6MCX9-- X&D \*1889120114

T+SK 5\*J OXGL&<. AO\*I 8\*R 0\*LD6\*P SBUCO&|C04&XN4UC 15\*SD&+&ABUCX9-- X4&XN4UCI5\*SD&+I /OU ) .Y89120115

T+SK#9--X90 ( G U\*286 /Y AGSK:OH\*U)\*X09+I 2\*( 2<LB&|GOQ| F&GD1(V;&|I6MC 05& -IM89120116

T+SL6/5UQ-2L|I|& /5L=<E NOH\*BE(X NH2<T-2+T\*:Z4N&E LX V&BB<T\_A+\*E,J CX \*&CS+C\_D+\*E#& UXAM )S<89120117

T+SHIMAJ&EN OMA\* ) BOCOH\*BF-D-1K# /2M76)8UB4C11DC H1<I 2-A-2&R 0\*L D6N9 8&TI1>( 5\_- /5U M8&89120118

T+SN&FHV&2080H) M\*TE&F<BG /R5DSM VIQHVZPMA)DZ7M&Q NU -NQ.\*NU >6ERO (E\*87JR &\_QE&D/P -\_4M 13\*89120119

T+SOXUAD6NR0PMA/ &FN EMA\_LGE )MA9 &G18 ITL /OHE KU V>2&GI&3R5>LT&IG E&<TDOUC1&FC3IUC A1&& Q-089120120

T+S+S6N9 9\*V,&+I B1\_V,&<XN04C05=. /5UQ-2P&IT| /5L =<V 1OH\*BE&D\*EN 2AS</IBHW-K:8HDD ,YY< -IH89120121

T+SQ)IIOHY3KCI I (D3BCII0&/YK\*DD\$ G/YK&EJ&E/YK\*FHD UXADD=8DUUA4&E&HD UXBA= Q8MJB<M<H8 MXBQ K&89120122

T+SRQTU: &HA: &TU: \*H89SUB4&S&H9&XCA &<J& I,T /OHE J4 WQ<BGINGR5>LT&IG F&<TDOUC1&FC3IUC A1&& Q9&89120123

T+SEL6N9 0\_V 5\_- /5UQUKR=IZX /5U QYSEEI,- /5L=<5D GOH\*BE&XDA\*-I3 7& (IKDWH&+TH&E&Z-KD BH:< H,Y89120124

T+S&+.HD5+E (M& 5:5DB)E+\_ZL3\*M&R JA5DHM&VJBVD.M&O 9VND+H X\*8HAI&T /OHE J-XK\*BGQJS C148 NA889120125

T+S\*II7D< K&8N>( 1K< @CENUOH)M\*V/ &DCA(P=Q) N\*W<|H AB<BGPEM-0& C&D W=E&T&YDOL&DOCO. 2-JQ 2.089120126

T+S)DP&DO/-HA&EV4 A<H|2-JR< L (Q\_B GC50A<HP&O/\* LB C4H\*|OH\*BE\_XD9+I 2?A 5<.A60GC9(X A6M 0HU89120127

T+S)M&2PS8=HENGH D./ 7DK +H&PAG \*E&MC/D&U \*E&D+ HXAI&A2Y-H2E&DE H& ZJ&HAI=- /OH E K\* N3<89120128

T+S:HF7 /5UQ-2T HMMH# S/E+ HMC&B &I9&: S/E&ST \*M/ --ENLL3\*NOL /5L =PE =C&E-9S:7OHD BET4 \*RY&89120129

T+S-5HE\*W&-EV&55 <D-Y&CAI&HDHOKS/ D|I(JV=GX\*O7H&C&O DHH&Y133RR-X2/OY <ABS.H<H&9WP9OH\* BG-H \*RH89120130

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+S-OHD YW<BG /8 AHD<Y,<BG /8AHD& Y7&OBR-OYW OAR-8 Y, OAR- Y?&BG /D BMBS'OH)T\*8BG /D OC \*\*\* -LM89120131

T+S/,HCZNL&BG SH MP<BG /Q \*\*\*\*\* B A )X09+( ?E 5<P S8&GGIMCB9<SFI)V 0\*LD6\*PS8&XN14C T1:H ;C\*89120132

T+SSWB=.M8&).&<. U1&E6NCE6)X06MC D9(XI5\*) 9--X9=) ,&<GD1(V -UCX9-- X&CDO:|A&<PX5&P C&2M R#D89120133

T+ST/IDA=&+--X&E4C DO:|A&<(XEO77D&G9 9--W6\*XT1)XEO\*J HI UDPH \* E1 O DAMD4AROHM UJDIO 128 8,089120134

T+SU\*XA( &AJ &2AS &CE QEAB\*EV E&AA &AP.\* \* E1 B&JRU EJS&EXBE&HAD&X8? 3-10HMAONDIOZMAO MDE 5:-89120135

T+SVPGA &8 S\*(; +XCT-DIO&BAS\*|V T&OF\*H5 -2OH\*H7& NMB|3 ZOTMC&S BZ IOH\*BF-DQHO7 /2V >610 4RU89120136

T+SMK9+( ?7I 5<. A6MCIS:|E6\*GC&2X 05\*BGQJS|H-X&DE?I Q-CEHCO. /5L=\*E T&55 <MU(OLEHCNU 1K04 :S&89120137

T+SX(OLE<CNU1L&5 R<M8(OLE|CNX3J< 1K 5R<MU(OLEHCNU 1K05R<MO(OLE(CNU 1L-5R<M&|OLFHCNU 15&4 MY&89120138

T+SYHOLFHCNU1S05 R<QO(OLF(CNU1T-5 R<Q&|O\*BGQJS|HUK O&K<BGN|91M . /OH OEOJM 5 B\*? \*3=7L \*)-2 \$,089120139

T+SZC:|\*9\*2 ZHKU SHK<ZIBUVHK-ZHKU -SKFIHYUTSKKIQU YSKWIH&U/DKHZH:U UDKOZH&UZD&TMBI &H5& 8A&89120140

T+SZ= V AM HT B> OH\*BF-DQH7\* /5U Q -(Q/CERPQ73OHC 3D+C /6GW-E7 /54 8&5SD<NV)S-(Q-|I Q8< 8JU89120141

T+SD9/6GW-E? /54 8&5SD<MY(M?|O-CA HP=\* /6GWSE,30< 10B\_-2&S OH)M\*V9 & \*BGQ:EHM (QOCE QH&D 6.<89120142

T+S,4&5S OH)M\*WA & \*BGQ:EHQLEICNQ 1K-50&5SD<M-1W|I Q8<BGQ:EAQ?(Q/CE HO-?30+C /6GW-O- 1K 4 83089120143

T+S&?0\*(Q9<BGQ:EH AE&2&GOJ-A&2T <E/ -9TEQH6-3OHC30< OOE\*W&2TUOH)/9YI 2&T <E/-9?(Q8|I Q-|< 20089120144

T+S\_DU<&10B\_T&5S 2&T-OH)/9YJ4&2T D<N-,R-(Q-|I(Q8<B GQ:EH<2&GOJ-AOH\* BESHDI&|/ ; CAQL R5>E 59489120145

T+S>V84C2&4CAB=| A0&TH1)PT&<|H1\*| KI 12&BG /YA<K6 :+ -BB& & /Q# &H HOH)RFID\_AB4E0H) RFCH EEQ89120146

T+S7-OH)RFH&\_AS5 C+-ENLLO&NO|30< 1KS6&<M\_O\*8GN|: .M/8( N\*WH&T K: :OH)RFH<\_JB6A+-E NLL0 5Z889120147

T+S0&FVNT&2T <MZ O\*CE..S# /5L=55 :C&E-9S?50 DX>8B GOJS-.QH\_-2&GOJT 3.OH\_-2C /5UQ#24 F.M< EE-89120148

T+S10HCYANM4&FVN T&2T <MY\_?TE..\*C /5L=TEH:C&E-9S? HO DX>2&GOJS-.QE /\_\*8GOJT?.M&\_K : NH \$L 89120149

T+S2JLLO&NO|30< 1K57 <M&\_O&8GN|: <MAB( N\*WH&P K: :+ HHC<BE /S /5U QX26F-Q- /5UQ-2C /5U 2/D89120150

T+S3<FG( OH)RF+O \_ASSC&CYANM4&FVN T&2T <MY\_OTE..\*L /5L=TNH:C&E-9S? HO DX>2&GOJS-.O- \_S\* 3:M89120151

T+S4G/5UQ-2C /5U Q&25D.QE +-ENLLO ENO|30< 1K57O<M& \_1&8GN|:(MAB( N\* WH&P K: :OH\*BEVH -0 \*3489120152

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+S5BI '2 B MHJM E/ NE\_ OK8J&EDJB KAJ &ZA&KAP. \*HAE /EKEIAMO4AR. SEA JDIHLDABOEZHLG1B K NH &JU89120153

T+S5'GX& I '2 B MHJME/ NE\_ O&8J& &DJ&E&AJ &ZA&E&AP. \*HAE/EKEIAMO4AR. SEA JDI LDABOEZ LG1 7H&89120154

T+S68U E&G\_Q 5 C E (- 6)S84C2'DC C5\_PT6)SLE+.T5\_X EE+IEB>( L; .K2)~ P1\*J 2\*R >.W&IG C&(Q 2 U89120155

T+S735N4 - C & AE F V B7UOH\* BF-D( .: | /OH06)S U84C2'MCS5&GR1KQ .VMB K740H\*BF-D N.UY 0Y-89120156

T+S8>OH)RFH<>K29 :OH)M\*WVE TE(ICN& /5L=EV G<M-(QTE IC>H1K-5S<M&(QTE <COH1L-5S<M&(Q&B GN18 =C&89120157

T+S9Z&E IOH\*BE\_X 09+( &?R &=.N&(I ISUCH1<.10JOHK;A & UUEM &+BDX/M ) I8V IIO >-<BG /Y ACK8 2#D89120158

T+S:U: &BG /&R5>L T&| .7&+.PO)XEH >W\*BG /YACK:OOH\* BE\_X09+( &?/ &\_ A&+MZ B' 0-D>D\*B G /Y -D&89120159

T+S&- J4>9\*BG0JS C->Q?|\*(QB 4)NJI ND?(Q-<BGN): MBP /OH06)S84C2=MC X5<XT&EA 6+|VE+& O6+E 5I\*89120160

T+S&E&(XEO\*LYMBO .-A&DD -G-DC/A&A BN HE: I CE .&:( C5 +&:J DV J&:N EN HE:R FE P&JZ &FM ;YU89120161

T+S'M90IDE:/AG5 )) AAHV / UJA:J& HMBM:AG BY <- 6 CY& KY <DXB K' SOH\*BF-DR.:Q< L S<CY )&889120162

T+S=EC DOIC &C D OITAFOH)RFH<?Z3 Y<M/O&LO&NO&: MN (OH)M\*YI&(44AF5\* W&YDDOH)K&ZBG /& R5>& NE\*89120163

T+S\*.84C20MCX5<X TQ)XEO4CA4' ( O&X T&XY MC/& S &HJE 4=D X V4 GM EF/ 6-2\*O&DE&A&D& H &D1H =YQ89120164

T+T FAI AUAQLA : A&A\*EB :D&A1&F4D :MAOGJ&G/&S.F UK U1-EH1&E K&K6 IO DMCO7 RO\_MCN6-1< &XC\* & Q89120165

T+TAA&J&3 RO+MC( 5\*5 5MCR&(ODH&BY <S-6HCY Y \*\*\*\*\* A & 7M ;MA9HGU&:/ 9AGUB;&E9 DIBBU <S&4 R8889120166

T+T&S&E:IG-J&E&BZ <<G& LA7OH\*BF-D O<., /5UO-3&8<< 30+ < L S<CY< L UKCO< L W<D& /5U Q-2& :1&889120167

T+TB7Z3 Y<M-(QTO &NO&: NN(OH)M\*YJ &(44AF5\*W&YDDOH) K&ZBG /&R5>LT&I. BE+-M2:(/6\*PC&:P O&CH '9U89120168

T+TC22:IS\* A1\*J\* D. 1<<G /YAFLD 70-D0800A<BHO+-O A<B&O) OA<B&OJ&B GOJSC.:\*OHCEH144 &DEM JKH89120169

T+TD\_RCYANM7 /5L =/V 7L&D&P=&2-&L /5I&I(MH& &BAL=L /OH06)S84C204C X5<XTQ)XEO4CA4=( O&X 4TY89120170

T+TEY&=M\_CFR0-D 1M&BG /YAFLOC D OHT :C DOIC &C D OITAFOH)RFH<?Z3 Y<M-1MC&NO&: MN (OH)R.Y89120171

T+TFTN|:HMC)I J -97HAA<BGMV, /OH O6)S84C21DCX5<X TQ)XEO4CA4=( O&X T&EN.- 2JKHA<EX /OH 81&89120172

T+TG:F-DL<I) /5U Q-3GM<UK&HEMUOH) M\*YZ&<B&G /&R5>L T&I.E&+-M2:( :\*P R5&PSMC&.SP< D / \*DX& 9J489120173

T+THR A<DGO&EA : IM &GT4 +M 5A&N &MA&EDV LMAJ&EN OMA) &FDGS&+(A9A HE:MA9UGX&:/A:MG D&:S OLO89120174

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+TIME:1A15 VMBO DJDG>&'C.E ,\_ = \*.5 >K\*LDIO3M / &<18D;& HSN A.O 2:&HAKVL /OH& J\* 2-3 -1 89120175

T+THI/5UQ-3HC<>Y &C5NUOH)M\*Y9&. &B G /&R5>LT&I .FE+I EB>( 6\*PCK4CC2<P C4V OB8V3 A HE&/ 4D/ & .M89120176

T+T.HAAQDD-&G/DD <M Z.CV (E&/ .&E&R DD -DAGNND0&G/MD QMAQFJD&SMAYNBD? SM&B&BAHDA&B&J&H&5 /K=< M1Y89120177

T+T<E&=JH9MHYH&\* FJ.&FXB1&H1<LVB' & 5 7G-J9 DIM D O C|50-D2=&BG /Y AHL(EOH)RFH<3MLI 4C D 8.089120178

T+T( NO&IWC&GN): &MC&ZOLN\*W&SS <DU 3H14AP=QO&YDHOH) 1Z&SJ C /OH06)S U84C3&DCC9(XA&MC S1:< 3/Q89120179

T+T(#&C<LU6\*XN14C R1\*( 1<GTONA+8&BV O GD EOJ2AP+D)7D -AA&DD -G/UD+M O GJAD&XC+2 IOMMAS 3 RO P&D89120180

T+T+6E5 QMC3-A90 SM ,/8IO:M Z&GN -&D/H5 V&I>\*IV 5850\*IX \*E&A2 XI NM Z&Z& \*E PAA& HM Y RY 89120181

T+T|1DA&ED:\$2XC/ &+7H \*O -BE #DOJ &B=\$2XC/&.P \*E&A HK/D&UD<&D+&B XD5 &E2Y-H2E&HEA(G-J 9 Y K, &89120182

T+T&ZSN A<& 4M<M AI P /OH& J44+&B GOJSC(CO4V00&ND& 1M<BGN):LMB /OH O6)S84C3&DCC9(XA&MC S1:< 3/Q89120183

T+TJX2:( &4CF6) & HE<|U6\*GRMBY.SP E\*EYPA&H HOE&Q1& D\* AI A HABRACS (A4KO ZOLMAQ1 90 PE=D #, &89120184

T+TKSMAVCFN QDJB \*H+ HXA9&B=6-XBE &B=(NX&RO XENM & -BE XDAA&B18D:& HSN A<- 50&HA(HT /OH J.M89120185

T+TL)F-DK(I7 /5U Q-3L:(MUIK 5S&ST -CJH4D&CKY&S5 OH) M\*ZV&(X&BG /&R5>L T&I|Z&<GT&B&GC2DC R8>< S&889120186

T+TMQMC19 D1&? = \*GG. \*HBIO GD FOJ &B18DG &-AA HID< KAA<DD &G/E N&BJ AFE O&BJ&F-:DMA\_ &MD Q 089120187

T+TNLBU&TK=J19J HD-&LA&B&D&B&J6-AR ' /BE14GWE0JO PD SGO&G/DD2MCAO GD MCR&(M 6H/A9 > ICHU LB\*89120188

T+TO+&CQU+SN A<O 5&E OA(RQ5X&B&G(Q& 4 CN6C D5VTO/OH\* 5/CM (E&< L0D(EI /3000H\*BF-D+(R7 /OH -K889120189

T+TPIE\_X09+( 9=) &\_A6+M.&|3' |I 5(- 6D&B&G /YAHTP NOH\*55\_X09+( &M&R O> .COMCS2)R 2)L M1+& O&E89120190

T+TQDPUCE5+G&O\*L I&B&GBOH)RFH<6ACQ JOH)M\*TN& -(Q&I+ HO<BGN)86M L30+C 3SHC /5L=15 FOH\* BEU\* \*H&89120191

T+TQ\* E AJOJE V DJON&AT\* ( \_ /OH E K46L&B&G(U\*M&R5>L T&I|7&<.S0&E 8&X O&<X&M5<PDPUCE5+G BQ+& QT-89120192

T+TR:2: .AOU&MQ:( .5U\_ 6\*PQOH)RFH< 6Z&S:OH)M\*TR& ?( Q&I+HO|I(QA<BGN)8 7M T30+C3S L /5L =+E E2D89120193

T+TE5B=(Q&I+H <B GN)89MAC30+C3S L /5L=+V L&ST-2&S OH)M\*TE&B&G /R 6 DQ&M I&GAN CH ) &AUQ )&89120194

T+T&OAV HJ/V&BN .J11&CE +J-9&DDQ LMA&ED4QMJIN&EV QM &RBDQ.M&Z&B C/ COM\*BF-D.(1X /3\* E6)O ;E89120195

T+T\*,9+( &M/ O>. COMCS2) 5)S&NQ<X M5<PD2+GT1MCA5+J &Z&XO&<.U&B>T /5U Q-3-A+D. /5L=15 F&5- K.-89120196

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+T)W8<FH(4)3S<C 3S\$LAST).OH)\$\*U 00|- /5\_2&E'-0XB GNI88MA? /5L=+N -@5T-0QY7\*?+H0|+ H1<D \*9089120197

T+T:/ST)20H)\$\*UH 0Q|- /5\_2K&'-0- 285 0QY76LE.CO. 30H 1505525T-28- 00QY7=LA.(7X(L) #COH 7H289120198

T+T~\*0 D78-(Q-CB .(7730+ (L)#CO. L~28BT 28, 255 <HX7:(Q8C6H(7? L~1255 OH\*BE2B G07H)1LH89120199

T+T-P60'-0XBG07I DEWE60H)\$\*UMDOP\$ /5\_2J1R/)28G07I HC6CB\* MHB\*-IY X-E-EM ROB5 GM Z &B, PLE89120200

T+T/KEZ0+M 67H10 JMA UJ\$NG)2J7S,6 FXA/&E#MGXA\_&FV \$0A9&GJ<H0A'EHCU +\$| /OH'E J08\$2B G+F2 2H489120201

T+TS(6)\$U84C3=MC 88\$|A&CXN82PR6:L P84CT1; .T&<BGOJS C+E\*9X?(Q-|(Q8C0 +M33S<.3S 5YCV .| Q-<89120202

T+TTH+M330+CAS3U :0Q08Y28G07H9G6C /0QU8,28G07H:G6C /0QU9GCOA+M33S . /3S=|&M9L< A+KL 30+ 8LM89120203

T+TUC28T OH)MUN &'(Q8CF<+ . /5\_ 2JA'-8+M-<F<+L. 30HC /5UQ -(Q/CE RPQ730HC30+ 2 LV <(E' "Q889120204

T+TU=+M73S<. /3U (|&M9L< A+M.30HC /OH00H)\$\*UHJOH\* <LW&+Q# /5\_2&I- 9Z28G07I DOBGOH) \$\*UD &1<89120205

T+TV9DOBGOH)\$\*U- KQR 9LE ' LV<OHD 9RCM+Q,3S G /5\_ 2+&'|TOB+M33S D ' LV<OHD9-TM+Q3 3S D R D89120206

T+TW40H)\$\*TO|QL# 3S E /3V(+N09;\_P 002|15;|E6)XU5=| S&+105\_I 5'|A02N JOIE A&DM <MAE E+- 0289120207

T+TX7+DX /OH'E K< 99\*BG+;8R5>LT&|| A&<.S02E 82X0&|P 084CR1+//9(P184C C2<PC4?|Q-<BGOJS C+Z< \*,<89120208

T+TYD+DT30+CASCY AOH)\$\*TULQDC3S< 8H Y+OI :D<F +/C ASCDC28S 0Q-:H2B G07IAD6E-25T-28T OH\* 28<89120209

T+TZVN|98M L3D+C /5L=&5 F25T-28T +B HC28&+U3A-CZ <0Q-:0<BGO7H2D6E -0Q-:E<BGO7I1D6E -OH\* E2-89120210

T+TD- /5 /5L=JN H25T-28T 28Y 0Q- :S\*(Q-<BG /5 /5\_ 2+-/L\*BGO7IDC6E (\*2?Y4+DM IEAAD DM 0 JO289120211

T+T,SD&K\*Y9 |M Y # D 0-D:728G /Y AHT, :OH\*:7'X09+( 221 0>.COMCM5ZL E&<|Y0'|E&+.T1\*G L&+< 55&89120212

T+TZ01;.TOH)RFHC #731EPOP\$633\*+\*X /5L=+5 D25T-0QY #E|+HOCF<+33S2L AST2\*OH)\$\*T00Q|- /52 |Y-89120213

T+T\_J\*4|Q<. /5L =|V /P&EP6|HACJO AP=\$QOH)JZK '\*=:Z | 07E2YD|G E-9\_ . /56VHDANHG4 52H AAX4 &-689120214

T+T>< (72-JH\* E\* V5/0 P=\$\$OH)JZKA A C3SHCAST>F28T <Q0#?|+H1<FH+9\$ /5\_2JAR-'28G07I EC6 \*\*D89120215

T+T7G028G07IFC6C BOH)MUI&|?|Q8|+ H-<FH+8# /5L=J5A <255 OH\*BE- \*\*\*\*\* C>6 AE AMDJ6J & 5 :/D89120216

T+TO8AE-GM MNADM HM V&B5 <M 5\*\*IU DKAE&DD-J-:YRAD- OMANHEX'NF&JHF5 EKA\_'HAUDKBA&G4- -MBD )TM89120217

T+TO\*MDI&E VMB\$ ?\*90ZMB-QAD-2MB\_ H.+>DXCA&.1-DKC( &<U-3#50\*(5 6F J M+V 9KC,?HIO=MC5 &|UM E-089120218

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

TGC1E&NA MDYNADM EMD&QAD/HMD)HKE WDO/ELNA<MD4 ..... 8B\*89120219

T+T\*8M A& E AM I & 5 DM N&AV GM / &BN HM \_&CE (M 9 &C5 &MA&DV LMAJ &EN OMA) &FE RMAZ &F5 2, H89120220

T+U 3GE )MA9&G30 JL? /OH'E J1 H2B G&B3R5>LT&|C&CL R2;PE60GR1\*|E2;P E6MCM6\*GPC DOHT :C D 7:289120221

T+UA><B&0| OA<BQ OK<BGOJSC.:\*OHCE HJLY2DENUOH)M\*V' &G OA<BHOH-OA<B& 0| OA<BQOKC1 JL- 2DDE 94 89120222

T+UBZ&28GJBQ< L S<B0< L U<C0< L W<D-20MM8|AED&2B GJBQ< L S<B8< L U<C0< L W<D-20UM 8|AH MQ<89120223

T+UCUJD| /4&W+ - HC<B& /Q< L S<C< < L U<C0< L W<D- 204M8|A|D&28GJBQ < L S<CH< L U<C0 < L R8D89120224

T+UD-ITAH|<JE+CO MJDI /4&WC DOHT 4C DOIC 2C DOITA HI<NE+CONJD| /4& M+A HC<B& /Q< L S<C0 &Y+89120225

T+UEEC DOIC =C D OITAH|<RE+COJD| /4&WC DOHT 8C D OIC =C DOITAH|< E+COPJD| /4&WC D OHT #0 89120226

T+UFNH-OA<B&0|-0 A<BQOKC3HJL-2HDJ COH)DIT--B-3 U H OC DOHT 2C DOIC =C DOITAH|<VE+CO /JD< JJ089120227

T+UG&OH)DI-OA<BH 0.-OA<B&0|-OA<BQ OKC1HJL-2HUJCOH) DI-OA<BHO< OA<B& 0|-OA<BQOKC1.JL- 2H4& #-889120228

T+UH.&28GJBQ& Y <OI BE-OA<BHO<-0 A<B&0& OA<BQOKC1 <JL-2(DJCOH)DI-0 A<BHO| OA<B&0& 0 A<BQ ;,289120229

T+UIF<D-2LMM8|CN D&28GJBQ< L S<CQ < L U<D< L W<D- 2LUM8|CRD&28GJBQ 8-Y<OI BE-OA<BH 0+ 0 #2489120230

T+UHA L U<D< L W<D-2L4M8|C|D&2B GJBQ< L S<BY< L U<D< L W<D-2MDM 8|CADE28GJBQ< L S<B0 2H289120231

T+UH2C DOICA C D OITAH|(EE+COJDI /4&W+ DH22&E /Q < L S<B8< L U<DH < L W<D-24UM8|DI D&2 M2089120232

T+U.7/4&WC DOHT OC DOICABC DOITA HI|(E+C1CJDI /4& WC DOHT 2C DOICA BC DOITAH|(JE+C1 DJD< #9 89120233

T+UC2OH)DIT-8B-? U HOC DOHT 4C D OICABC DOITAH|(N E+C1EJDI /4&WC D OHT 6C DOICABC D OIT 'YD89120234

T+U|\_KC3QJL-2JUJ COH)DI-OA<BHO+ 0 A<B&0&-OA<BQOKC3 PJL-2J4JCOH)DIT- DB-? U HOC DOHT DC D 4H&89120235

T+U+Y<B&0J OA<BQ OKC3QJL-2MDJCOH) DI-OA<BHO. OA<B& 0J OA<BQOKC3RJL- 2MMJCOH)DI-OA<BH 0.-0 N&289120236

T+UIT L U<D< L W<D-20UM8|EID&2B GJBQ8B Y.OI BE-0 A<BHO< OA<B&0J 0 A<BQOKC1\$JL-2M4J COH\* 02M89120237

T+U&JJBQ< L S<CH < L U<D< L W<D- 2PDM8|EJD&28GJBQ < L S<C&< L U<D& < L W<D-2PHM8|EN D&2 1 D89120238

T+UJR/4&WOH\*8ET& HJHI /5UQ-2=X<B- 1KDM:|AANRCYANM7 /5L= E 7C&EDJN\* W2YD10H\*BFYD'J(3 /OH -EH89120239

T+UKMFYD4JJC /OH E-S)E(23G /8AJL/ DX28G /DBGDK-OH) K028G /5 /4K 12G 142XN14CD1:P102N 0\*E #Z<89120240



8912 DISPLAY ADAPTER TEST

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+UL11(XE8>I 2:I	9=-P5>E6OC018R	5_V 5_-E5MCC5ZG	XE<GT&E 8@PR5<X	NO) ( 5<XG2+( 0@G	U8ZM ;JQ89120241
T+UMH&+I#2:I 18G	14=LRI) \$PI)PI5* )	B@TE&<100;) 0:(	B@TE&< P9DCW2	L&<GV5XDE+ H2:I	1; * 2/389120242
T+UNES'S59(XEPE1	* & < . E& + . U 6 * N 8 * R	6 * PC 5 _ PN 1 *   T & G	F 8 @ PR & +   E 8 >   P E 1	* ( C   & A E K & 0 A I R R	H 0 Z * 2 U 8 9 1 2 0 2 4 3
T+UD / 30D1-AEM00	A (RRH)1CBG(QE" -D,	EOH*BF-D>JRL /40	N6) \$U84C31UCD1;P	10@N 5 ' \$ L 4 @ X N 1 4 A	( 8 _ H L L U 8 9 1 2 0 2 4 4
T+UD@2)-P1*J 2*R	8>.W@UCIBUC05N4	@*4Z6CA9H1MZ6 1'	HV-0;KZNHVT1'KUB	< MDU<BY< MDW<C3	/4U J2089120245
T+UP61T3AKUB< MD	U<B3 /4XF <IHL-0	AKD&0 . XB GK * QBB Y	< O I A G _ 3 3 C K U 8 < MD	U<C C / 4 X F   < J H L - 0	AK D & H , Y 8 9 1 2 0 2 4 6
T+UQ1C. /4XF <N	HL-OAKD&0 (<BGK*Q	8D Y<O I A G _ 3 3 F K U 8	< MDW<C8< MDU<C8	/4XF <IHL-OAKD&	O+< 2Z089120247
T+UR&/4XF <IHL-0	AKD&0H XB GK * QBB Y	< O I A G _ 3 3 I K U 8 < MD	U<B3 /4XF DZHL-0	AKD&0 . XB GK * Q@K4Z	+C D @DU89120248
T+UEXK&0<BGK*Q	8& Y<O I A G _ 3 1 < K U 8	< MDU<CH< MDW<DC	/4XF D5HL-OAKD&	O (<BGK*Q@LUZ+C E	H Z C * K : 8 8 9 1 2 0 2 4 9
T+USS (XB GK * QBB Y	< O I A G _ 3 1 I K U 8 < MD	U<C T / 4 X F   E A H L - 0	AKD&0H XB GK * Q@4M2	+C E H Z C ' 8 0 H   I 1 T -	A B - 2 2 H H 8 9 1 2 0 2 5 0
T+U* I O I A G _ 3 3 K K U 8	< MDU<B8< MDW<D.	/4XF  (IHL-OAKD&	O<<BGK*Q@5DZ+C E	H Z C 2 0 H   I 1 T - B B - ?	U D * @ 1 * 8 9 1 2 0 2 5 1
T+UIQ_33NKUB< MD	U<CL /4XF  (IHL-0	AKD&0 (XB GK * Q@54Z	+C E H Z C 8 0 H   I 1 T -	D B - ? U D : 7   (IHL-0	AK D & O 0 0 8 9 1 2 0 2 5 2
T+U;L<BY< MDW<DL	/4XF  (VHL-OAKD&	O.<BGK*Q@DUZ+C E	H Z C > 0 H   I 1 T - H B - ?	U D : 7   E _ H L - O A K D &	O<< 2Q89120253
T+U~+/4XF E1HL-0	AKD&0<XB GK * Q@PMZ	+C E H Z C 4 0 H   I 1 T 8 B	G J # ~ / O H E _ U I H 3 ' 0	A J @ / H M T 7 * * * C - H -	B C D - # 8 8 9 1 2 0 2 5 4
T+U-I J ' R H T 3 * * C	-M-HC EG9U-DC A	HL- OH*BG-EHLUT	OH*BF-DJK(4+ M	ON_X /4-LOH*BF-<	DK \$ Z ' 8 Q 8 9 1 2 0 2 5 5
T+U/DOH*BFZM< M-	QKV ' * 0 OHEH/BB	G / Y B O D U 5 C E H _ U Z	E   - 2 < B A K E Y < M -	=KBB< DZ+ * * C / OH	; M Y 7 - 4 8 9 1 2 0 2 5 6
T+U/*LUT)OH*BF-D	JK(4+ M->N_X /4-	,OH*BFZ. /OHE ON	IWXBG / Y B G M W 7   E 9	V@TO"R-<B C O A K * P	/6< MS@89120257
T+US:=XBG SHAPXB	G / 3 T 2 < N _ 1 _ S L 4 * S	W 2 ) P G & ( X E B _ 0 5 * L	E I D C T 5 U C A & ( - 0 4 ' (	. 8 D 7 T 2 < N _ 6 * P S 5 ' S	N 8 Z M ) 3 Q 8 9 1 2 0 2 5 8
T+UT5&+SABUCN5> (	@@TEO'. EID_11<P	V2 E&<GD1(XE8>I	9=-T2<N_1_S L4*S	W2)PG&<TA9*N OMC	C5XZ \$ G 8 9 1 2 0 2 5 9
T+UU094A'S'8R75	0:PA2)IA0_  E6D7	ABUCP1)V 9<LTPMC	89+( 1@XV1MCN5UA	E (XE8_-05: .E&+	O&<D NKY89120260
T+UV, & I - 0 4 '   I I U C	D1:PI@N 2:I 0'S	N5*PC8@PD&<GN1DC	HO;I 5'SW1)V 5_M	,8>LS5@PC84CC5ZG	X<D 7SU89120261
T+UWMS*J 1<PV2*	E&+8H2)  E&< 05:	15:L15* ) 2)N 0:	TO; C2 LE5:( 5<G	PBU?IUCN5> ( 0'S	M5*M #IY89120262



8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+VXL, &ET-IHBB#- AR<B&O)? /5XA, &E T-7HBB#-BR<B&O)? /5XA, &ET/IHBB#- DR<B&O)? /5XA, &E T/7H 5EM89120329

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+W VOUCX96CX94A &DA &DA &DA &DA &DA &DA &DA &DA &FA & <PX52PC82P DE<LA82E -UCX9=- X&D 3#U89120351

8912 DISPLAY ADAPTER TEST

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

```

T+WM7E(|017#Z::X Z::XZ::XZR(U9F8 SRNV-/6MTQD)V$OC BRP1-260AQ+EVS6C 7RRM9ZMD-C-EVDOD =R$< M3E89120373
T+WN2QMSV7OE-R*) /)MPJQP9V66F6R:N /MWFEO:|TE+.NOUC R1<XN8'V 5'PD&DC AB=( 0&TK&DA 0:| T&KH 1J889120374
T+WO_9+.Y&DCA8=( 50GR1+/ 2)PT&+. B&(-N1<GT84CSOUC BB>TX94CI5:|REDA '5_) 1<PCE&DA &+L N1:* 69*89120375
T+MPY54CI5:( 5)V /9<| &DA &(PRQ:L C&(|$F1UCH1<I 8_P S&(PGO>-.COCCR1*G D:<GCQ(POQ<XN84C 1&D 9JD89120376
T+WQT&DA &DA &D 'D 'SDA &DA 'EDA &<BGR<. /44 787TO2<$02|COQ(IL R1-C02-$010CM6*P 0a| 1&Z89120377
T+WR;1-G6Q<|A9+| 15_N QDCI5*(06)X EO=( 9<LT&<GN1FG 06MCHO)XD9&GR1MC F5_V 5($D1)( 2UC S9(* LA 89120378
TE6R65'$R84CC0)N 0&GUB&N 8&TI8UC MO|IT ..... 28-89120379
* ..... SEC TION 891 - SYS /3 DISPLAY ADAPT ER TEST ..... 89120380
***** ..... 89120381
* SSW 10 ON PKIN TS MDB'S IN ROUT INE 04 AND 05 ..... 89120382
* SSW 12 ON PRIM TS CONTROL STORA GE IN ROUTINE 07 ..... 89120383
* SSW 17 ON BYPA SSES CONTROL STO RE LOAD FOR A TI GHT LOOP WHILE ..... 89120384
* ..... LOOP ING ROUTINES. .... 89120385
* SSW 1C ON CAUS ES ROUTINE 24 TO BE SKIPPED. .... 89120386
* MANUAL SELECTI ON ROUTINES- .... 89120387
* ..... ROUTINE 4 1 - C.E. MANUAL MICROPROGRAM ..... 89120388
* ..... ROUTINE 4 2 - C.E. TEST BO X CHECK OUT ROUT INE ..... 89120389
* ..... ROUTINE 4 3 - MDB AND CONT ROL STORE DUMP U TILITY ..... 89120390
* WARNING - THIS SECTION DESTROY S THE MICROCODE REQUIRED FOR SYS TEM * ..... 89120391
* ..... OPER ATION. RUN SECTI ON 893 TO RELOAD ..... 89120392
***** ..... 89120393
E***E7*-DC*PHS =*7M&F| | C F& ASC R A SO Q ..... 09510608730 115761# 89120394
LAST PAGE

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

0000      2      DECK 4
          3      SEQ 0
          4 88930 START 0
          5      TREP
          6 *****
          7 *          32CA UTILITY PROGRAM FOR LOADING MICROPROGRAM
          8 *****
          9 ***** SECTION PREFACE *****
         10
0A00      11      DRG X'A00'
0A00 8930 0A01      12      DC XL2'8930'          SECTION ID
0A02 00   0A02      13      DC XL1'0'          CURRENT ROUTINE NUMBER
0A03 01   0A03      14      DC XL1'01'         RESERVED
0A04 0000 0A05      15      DC XL2'0'         ADDRESS OF FIRST ROUTINE
0A06 2005 0A07      16      DC AL2(RTNC1)      RESERVED
0A08 FFFF 0A09      17      DC XL2'FFFF'       UDT ENTRY
0A0A 890000 0A0C     18 UDT1  DC XL3'890000'
0A0D C11000 0A0F     19 UDT2  DC XL3'C11000'
         20
         21
         22
         23
         24
         25
         26
         27
0058     28 NOTRDY EQU X'58'      TIO NOT READY
0059     29 INTPND EQU X'59'      TIO INT PENDING
005D     30 ATTCHK EQU X'5D'      TIO ATTCH CHECK
005F     31 BUSY EQU X'5F'        TIO ATTCH BUSY
0048     32 HDBO EQU X'48'        LIO/SNS HDB
0088     33 HDBCB EQU X'88'        SENSE AUX HDB'S
0058     34 CPSTOR EQU X'58'      LIO/SNS CONTROL STORE
0059     35 OPDEC EQU X'59'      LIO/SNS OP DECODE
0058     36 MSDAR EQU X'58'      LIO/SNS MS DATA ADDR REG
0058     37 SIOI EQU X'58'        SIO IMMEDIATE

```

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

          39 *****
          40 *
          41 *          USES DA LIO INSTRUCTION TO LOAD CORE WITH OBJECT
          42 *          PROGRAM AT ADDRESS 0 IN DA ATTACHMENT CONTROL STORE
          43 *          OBJECT PROGRAM INPUT FROM CARDS OR DISK
          44 *          AT END OF LOADING A DUMP IS DONE FOR VERIFICATION.
          45 *
          46 *****
          47
          48 *****
          49 *          ROUTINE 1 - MICROPROGRAM LOADER
          50 *****
          51 *
          52 *****
          53
          54      ORG X'2000'
          55 *
          56 *          THIS PROGRAM MUST BEGIN AT LOCATION X'2000' SO THAT
          57 *          DCP MAY LINK AND BE RETURNED TO FROM THIS PROGRAM
          58 *          BEFORE THE 'HA' HALT IS GIVEN WHICH SIGNIFIES THAT
          59 *          DCP HAS LOADED SUCCESSFULLY.
          60 *          THE FOLLOWING FIVE BYTES ARE A COMMUNICATIONS AREA USED TO
          61 *          INFORM PGM FC1 OF THE MICRO-MAP LOCATION AND THE DECK ID.
          62 *          DO NOT CHANGE THE LOCATION OF THESE BYTES
          63 AMICRO DC AL2(TABLE+255)      STARTING ADDR OF MICRO-CODE FOR FC1
          64 XKFC7 DC CL3'FC7'          DATA DECK ID TO BE USED
          65
          66 *          ROUTINE PREFACE
          67
          68 RTN01 DC XL1'01'          ROUTINE 1
          69 DC XL1'00'
          70 XFFFF DC XL2'FFFF'       LAST ROUTINE
          71
          72 *****
          73 *          FIRST READ MICROCODE CARD IMAGES AND COVERT FROM 4 BYTES TO 3
          74 *          BYTES
          75 *****
          76      MVI QUICK-2,X'20'
          77      CLC BLOD+3(2).LINKA      WAS A SYSTEM RESET PERFORMED
          78      BNE LINKK                WHILE DCP WAS IPLING?
          79 START EQU *                *
          80      CLI SWITCH,X'FF'        FIRST PASS?
          81      JE BYPASS
          82      MVI SWITCH,X'FF'        BYPASS AFTER FIRST PASS
          83      TBN SEYTE5,SSW2F        SHOULD THE RETURN BE TO DCP?
          84      SBF SEYTE5,SSW2F
          85      JF NORM
          86      MVC BLOD+3(2),X'1FF5'   NO--SECTION WAS LOADED NORMALLY
          87      MVC QUICK(2),X'1FEF'   USE THE ADDRESS AT 1FF5 AS THE
          88      MVI QUICK-2,X'30'       USE ADDRESS TO LOAD MICRO FROM
          89 *
          90 *          RETURN POINT TO DCP
          91 *          THE 'B LOAD' WILL HAVE AS ITS PARAMETER
          92 *          AN ADDRESS POINTING TO THE CCHHR REQUIRED FOR THE
          93 *          DIRECT LOAD OF THE FCX DECK. THIS ADDRESS IS
          94 *          PICKED UP AT '1FEF - 1FFF' (SETUP BY DCP)
          95 *
          96 NORM B PRINT                PRINT ONLY ON FIRST PASS
          97      DC XL1'06'
          98      DC IL1'28'
          99      DC AL2(MSGLD)
         100      TBF SEYTE0,SSW00+SSW01   BYPASS HALT IS LOOPING
         101      JF BYPASS
         102      B HALT
         103      DC XL2'89A3'          HALT * A3*****
         104 *          IF SSW04 IS ON
         105 BYPASS EQU *
         106      MVI MICOD,X'00'        CLEAR BUFFER FOR MICROCODE

```



8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

21BE 3D 96 210C 243 CLI WORK,X'96'  
21C2 C0 84 218A 244 BH LENGTH  
21C6 C2 01 0880 245 TEDONE LA INPUT,XR1  
21CA 4E 01 19 2100 246 ALC 25(2,XR1),BUFAD  
247 \*  
21CF 4D 01 19 210A 248 CLC 25(2,XR1),BUFED  
249 \*  
21D4 F2 84 2A 250 JH CHKEND  
251 \*  
21D7 1C 02 21E7 19 252 MVC MOVE+3(3),25(,XR1)  
21DC 1C 00 21E8 17 253 MVC MOVE+4(1),23(,XR1)  
21E1 D2 01 1A 254 LA 25(,XR1),XR1  
255 \*  
21E4 1C 00 0000 00 256 MOVE MVC \*-\*( \*-\*) , \*-\*( ,XR1)  
21E9 C0 87 2135 257 B LOADC  
21ED C0 87 021A 21ED 258 CHKSEQ EQU \*  
21F1 C6 21F1 260 DC XL1'C6'  
21F2 31 21F2 261 DC IL1'49'  
21F3 26B7 21F4 262 DC AL2(ERR7)  
21F5 15F2 21F6 263 DC XL2'15F2'  
21F7 C0 87 0222 264 B HALT  
21FB 89F2 21FC 265 DC XL2'89F2'  
21FD C0 87 2017 266 B START  
2201 C0 87 021A 2201 267 CHKEND EQU \*  
2205 C6 2205 268 B PRINT  
2206 31 2206 269 DC XL1'C6'  
2207 2768 2208 270 DC IL1'49'  
2209 89F3 220A 271 DC AL2(ERRF)  
220B C0 87 0222 220A 272 DC XL2'89F3'  
220F 89F3 2210 273 B HALT  
2211 C0 87 2017 2210 274 DC XL2'89F3'  
2215 275 B START  
2215 276 CHKFCB EQU \*  
2219 C6 2219 277 B PRINT  
221A 31 221A 278 DC XL1'C6'  
221B 26E8 221C 279 DC IL1'49'  
221D 89F4 221E 280 DC AL2(ERR8)  
221F C0 87 0222 221E 281 DC XL2'89F4'  
2223 89F4 282 B HALT  
2225 C0 87 2017 2224 283 DC XL2'89F4'  
284 B START  
2229 285 CARDIN EQU \*  
2608 286 USING ENDADD,XR2  
287 LA ENDADD,XR2  
288 CLT TERP,X'03'  
289 \*  
2231 C0 81 23FE 290 BE SENSE  
291  
2235 3D FF 7000 292 CLI PATCH,X'FF'  
2239 C0 81 22E9 293 BE ENDADT  
223D C0 87 021A 294 B PRINT  
2241 02 2241 295 DC XL1'02'  
2242 20 2242 296 DC IL1'32'  
2243 4E18 2244 297 DC AL2(PATCHX)  
2245 C0 87 021A 298 B PRINT  
2249 01 2249 299 DC XL1'01'  
224A 09 224A 300 DC IL1'9'  
224B 4E21 224C 301 DC AL2(PATCHH)  
224D C2 01 6FFE 302 LA PATCH-2,XR1  
2251 D2 01 02 303 INCTOA LA 2(,XR1),XR1  
2254 1C 01 263E 01 304 MVC TEMP,1(2,XR1)  
2259 1C 01 210C 01 305 MVC WORK,1(2,XR1)  
306  
225E 0E 01 263E 263E 307 ALC TEMP(2),TEMP  
2264 C2 02 286A 308 LA UNUSD+2,XR2  
2268 36 02 263F 309 A TEMP,XR2  
310

LOAD CARD IMAGE POINTER  
ADD BUFFER LOCATION TO  
END ADDRESS OF CARD CODE  
COMPARE BUFFER LENGTH TO  
CARD CODE CORE REQUIREMENT  
IF BUFFER IS NOT BIG ENOUGH  
ERROR  
INDICATE CARD ADDRESS IN CORE  
INDICATE LENGTH OF CODE  
INDICATE START ADDRESS OF  
CODE ON THE CARD  
MOVE CODE TO BUFFER  
BRANCH TO READ NEXT CARD  
SEQUENCE CHECK  
CODE LENGTH CHECK  
DECK ID CHECK  
ALL CARD ARE READ IN  
BUFFER  
SEE IF OPTION 3 SELECTED (SENSE  
AND DUMP MC CORE)  
ANY PATCHING TO BE DONE?  
BRANCH IF NOT  
PRINT HEADING FOR PATCH  
PRINT HEADING  
POINT XR1 AHEAD OF PATCH  
POINT XR1 TO ADDRESS  
GET PATCH ADDRESS  
SAVE PATCH ADDR IN WORK SPACE  
CONVERT ADDR TO BYTE DISPLACEMENT  
POINT XR2 TO MICRO MAP  
ADD DISPLACEMENT

8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

226C D2 01 02 311 NEXDAT LA 2(,XR1),XR1  
226F 4D 01 01 3D8C 312 CLC 1(2,XR1),ALLO  
2274 C0 81 2251 313 BE INCTOA  
2278 4D 01 01 2008 314 CLC 1(2,XR1),XFFFF  
227D F2 81 5A 315 JE EPATCH  
2280 39 F8 2108 316 NOTSRT TBF WORK-1,X'F8'  
2284 F2 90 3F 317 JF PATCHF  
2287 1C 01 263E 01 318 MVC TEMP,1(2,XR1)  
228C 9C 01 00 01 319 MVC 0(2,XR2),1(,XR1)  
2290 C0 87 021E 320 B UNPACK  
2294 02 2294 321 DC IL1'2'  
2295 210C 2296 322 DC AL2(WORK)  
2297 4E25 2298 323 DC AL2(PPATCH-5)  
2299 0E 01 210C 3D8E 324 ALC WORK(2),ONET  
229F 0D 01 278A 210C 325 CLC NINST(2)-WORK  
22A5 F2 84 06 326 JH NUMIOK  
22A8 0C 01 278A 210C 327 MVC NINST(2),WORK  
328  
22AE C0 87 021E 329 NUMIOK B UNPACK  
2282 02 2282 330 DC IL1'2'  
2283 263E 2284 331 DC AL2(TEMP)  
2285 4E2A 2286 332 DC AL2(PPATCH)  
333  
2287 C0 87 021A 334 B PRINT  
2288 01 2288 335 DC XL1'01'  
228C 09 228C 336 DC IL1'9'  
228D 4E2A 228E 337 DC AL2(PPATCH)  
338  
228F E2 02 02 339 LA 2(,XR2),XR2  
22C2 C0 87 226C 340 B NEXDAT  
341  
22C6 C0 87 021A 342 PATCHE B PRINT  
22CA C7 22CA 343 DC XL1'C7'  
22CB 12 22CB 344 DC IL1'18'  
22CC 4DF8 22CD 345 DC AL2(FORME)  
22CE 89EC 22CF 346 DC XL2'89EC'  
22D0 C0 87 0222 347 B HALT  
22D4 89EC 22D5 348 DC XL2'89EC'  
22D6 C0 87 3C41 349 B LINKK  
350  
22DA C0 87 3D15 351 EPATCH B GENSUM  
22DE 0C 03 278E 3D85 352 MVC CHKSUM(4),PAR+3  
22E4 C0 87 021A 353 B PRINT  
22E8 16 22E8 354 DC XL1'16'  
355 \*\*\*\*\*  
356 \* CHECK NUMBER OF INSTRUCTIONS OF MICRO-CODE WITH THE AVAILABLE CORE \*  
357 \*\*\*\*\*  
22E9 358 ENDADT EQU \* SAVE START ADDRESS OF CODE  
359 MVC ENTT,ADMICD IN BUFFER  
22EF 0E 01 264C 2106 360 ALC ENTT,D255(2) ADD 256 BYTES  
22F5 0C 01 210C 2644 361 MVC WORK(2),X0100 INITIALIZE WORK TO 256  
22FB 0D 01 278A 210C 362 LOOP CLC NINST(2),WORK TEST FOR END  
2301 F2 04 3F 363 JNH ACT  
2304 0E 01 264C 2106 364 ALC ENTT,D255(2) INCREASE ADDRESS COUNT BY 1 BMT  
230A 0E 01 210C 2644 365 ALC WORK(2),X0100 ADD 256 TO WORK  
2310 3D 09 2108 366 CLI WORK-1,X'09' TEST FOR ENOUGH CORE  
2314 C0 82 22FB 367 BL LOOP OKAY UNTIL WE REACH 9  
2318 368 NOCORE EQU \* CORE IN NOT AVAILABLE  
231E 0C 01 233E 264C 369 MVC ENTAB(2),ENTT MOVE END CODE ADDRESS TO DUMP  
231F C0 87 021A 370 B PRINT  
2322 C6 2322 371 DC XL1'C6' PRINT NO CORE MESSAGE  
2323 4F 2323 372 DC IL1'79'  
2324 2737 2325 373 DC AL2(ERR9)  
2326 89E1 2327 374 DC XL2'89E1'  
2328 C0 87 0222 375 B HALT  
232C 89E1 232D 376 DC XL2'89E1'  
232E 8C 00 38 377 SNS TERP(,XR2),X'00'  
2331 8D 04 38 378 CLI TERP(,XR2),X'04'

INCREMENT XR1 TO DATA  
IS DATA ALL 0000 (DELIMITER)  
IF SO GO TO NEXT ADDRESS  
IS DATA = FFFF (END OF PATCH)  
JUMP OUT IF SO  
HI 5 BITS MUST BE ZERO  
ERROR IF NOT  
MOVE DATA FOR UNPACKING  
MOVE DATA TO MICRO MAP  
UNPACK ADDRESS FOR PRINTING  
ADD 1 TO ADDRESS IN WORK  
IS IT HIGHER THAN NUM INSTRUCTIONS  
JUMP IF NOT  
INCREASE NUM OF INSTRUCTIONS  
UNPACK THE DATA FOR PRINTING  
PRINT ADDR AND DATA  
POINT XR2 TO NEXT WORD IN MAP  
GO GET NEXT DATA  
PRINT FORMAT ERROR  
GO END  
GO GENERATE A CHECK SUM  
MOVE IT INTO MICRO MAP  
SPACE 6  
SAVE START ADDRESS OF CODE  
IN BUFFER  
ADD 256 BYTES  
INITIALIZE WORK TO 256  
TEST FOR END  
INCREASE ADDRESS COUNT BY 1 BMT  
ADD 256 TO WORK  
TEST FOR ENOUGH CORE  
OKAY UNTIL WE REACH 9  
CORE IN NOT AVAILABLE  
MOVE END CODE ADDRESS TO DUMP  
PRINT NO CORE MESSAGE  
E1 HALT  
SENSE DATA SWITCHES  
SEE IF OPTION 4 SELECTED DUMP





IBM MAINTENANCE DIAGNOSTIC PROGRAM

8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
251A 3C 5B 3B73 515 MVI BUF-2,C'S
251E 0E 01 3C20 3C1C 516 XOKX ALC TEM,ONED(2)
2524 0C 01 3B78 3C20 517 MVC QOUNT,TEM(2)
252A 0E 01 3B78 3C20 518 ALC QOUNT,TEM(2)
2530 C2 01 3B25 519 LA BUF-80,XR1
2534 34 01 2554 520 ST XDDR1,XR1
2538 C2 01 3B4D 521 LA BUF-40,XR1
253C 34 01 255D 522 ST YDDR1,XR1
2540 0E 01 2554 3B78 523 ALC XDDR1,QOUNT(2)
2546 0E 01 255D 3B78 524 ALC YDDR1,QOUNT(2)
254C C0 87 021E 525 B UNPACK
2550 00 2550 526 XJUNT DC XL1'00'
2551 0000 2552 527 XDDR DC XL2'0000'
2553 0000 2554 528 XDDR1 DC XL2'0000'
2555 C0 87 021E 529 B UNPACK
2559 00 2559 530 YJUNT DC XL1'00'
255A C000 255B 531 YDDR DC XL2'0000'
255C 0000 255D 532 YDDR1 DC XL2'0000'
255E C0 87 021A 533 B PRINT
2562 06 2562 534 DC XL1'06'
2563 58 2563 535 DC IL1'88'
2564 3B75 2565 536 DC AL2(BUF)
2566 F2 87 55 537 J XDONE
2569 0E 01 3C14 3C1E 538 XVER16 ALC SA,D000F(2)
256F 0E 01 3C18 3C1E 539 ALC SB,D000F(2)
2575 0C 01 25A6 3C14 540 MVC XUNPK,SA(2)
257B 0C 01 25A6 3C18 541 MVC YUNPK,SB(2)
2581 0E 01 3C14 3C1C 542 ALC SA,CNED(2)
2587 0E 01 3C18 3C1C 543 ALC SE,ONED(2)
258D 35 01 25A6 544 L XUNPK,XR1
2591 35 02 25A6 545 L YUNPK,XR2
2595 6D 0F 00 00 546 CLC 0(,XR1),0(16,XR2)
2599 F2 81 04 547 JE XOKY
259C 3C 5B 3B73 548 MVI BUF-2,C'S
25A0 C0 87 021E 549 XOKY B UNPACK
25A4 10 25A4 550 DC IL1'16'
25A5 0000 25A6 551 XUNPK DC XL2'0000'
25A7 3B45 25A8 552 DC AL2(BUF-48)
25A9 C0 87 021E 553 B UNPACK
25AD 10 25AD 554 DC IL1'16'
25AE 0000 25AF 555 YUNPK DC XL2'0000'
25B0 3B6D 25B1 556 DC AL2(BUF-8)
25B2 C0 87 021A 557 B PRINT
25B6 01 25B6 558 DC XL1'01'
25B7 58 25B7 559 DC IL1'88'
25B8 3B75 25B9 560 DC AL2(BUF)
25B9 C0 87 24BD 561 B XOODP
25BE 562 XDONE EQU \*
25B8 C0 87 021A 563 B PRINT
25C2 01 25C2 564 DC XL1'01'
25C3 2F 25C3 565 DC IL1'47'
25C4 3A67 25C5 566 DC AL2(OPRX)
25C6 C0 87 021A 567 B PRINT
25CA 07 25CA 568 DC XL1'07'
25CB 2F 25CB 569 DC IL1'47'
25CC 3A96 25CD 570 DC AL2(OPRY)
25CE C0 87 0222 571 B HALT
25D2 89E2 25D3 572 DC XL2'89E2'
25D4 30 00 2640 573
25D8 3D 05 2640 574 SNS TERP,X'00'
25DC C0 01 2609 575 CLI TERP,X'05'
25E0 3C 02 2640 576 BNE ENLLOD
25E4 C0 87 2343 577 MVI TERP,X'02'
578 B ACT
25E8 3D 02 2640 579
25EC F2 81 1A 580 PRINTQ CLI TERP,X'02'
581 JE ENLLOD
25EF 582 PRINTX EQU \*

GET LENGTH AFTER UNPACKING
GET LENGTH AFTER UNPACKING
GET START ADDRESS IN BUF
GET ADDRESS FOR UNPACKED CODE
GET START ADDRESS IN BUF OF MICRO CD
ADVANCE OFFSET
UNPACK CODE
PRINT BUF
ADVANCE ADDRESS TO END OF CODE
MOVE TO UNPACK AREA
POINT TO NEXT STARTING ADDRESS
UNPACK CODE
PRINT CODE
PRINT OPERATOR MESSAGE
OPERATOR PRINT
ERROR HALT # E2
RESET OPTION TO 2
LOAD CORE ONLY ?

PART NO. 4234257
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IBM MAINTENANCE DIAGNOSTIC PROGRAM

8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
25EF 0C 01 2608 4DE6 583 MVC ENDADD,ADMLT(2)
25F5 0E 01 2608 264C 584 ALC ENDADD(2),ENTT
25FB 0E 01 2608 264C 585 ALC ENDADD(2),ENTT
2601 C0 87 3B79 586 B DUMP
2605 3D95 2606 587 DC AL2(MLTAC)
2607 0000 2608 588 ENDADD DC XL2'0000'
589
2609 C0 87 021A 2609 590 ENLLOD EQU \*
260D 06 260D 591 B PRINT
260E 2F 260E 592 DC XL1'06'
260F 3AC5 260E 593 DC IL1'47'
2611 39 C0 0208 2610 594 DC AL2(OPRK)
2615 C0 90 3C57 595 TBF SBYTE0,SSW00+SSW01
2619 C0 87 0222 596 BF BL0D
261D 89A4 261E 597 B HALT
261F 38 08 020D 261E 598 DC XL2'89A4'
599 TBN SBYTES,SSW2C
600 \*
2623 C0 90 3C57 601 BF BL0D
2627 35 20 1FFF 602 L X'1FFF',PIIAR
262B C0 87 021A 603 ADCHK B PRINT
262F 06 262F 604 DC XL1'06'
2630 11 2630 605 DC IL1'17'
2631 38DA 2632 606 DC AL2(ADK)
2633 C0 87 0222 607 B HALT
2637 89E3 2638 608 DC XL2'89E3'
609 B LINKK
610 \*
611
612 \*\*\*\*\*
613 \* VARIABLES \*\*\*\*\*
614 \*\*\*\*\*
615 TEMP DC XL2'0'
616 TERP DC XL2'0'
617 \*\*\*\*\*
618 \* CONSTANTS \*\*\*\*\*
619 \*\*\*\*\*
2641 0216 2642 620 LINKA DC XL2'0216'
2643 0100 2644 621 X0100 DC XL2'0100'
2645 0200 2646 622 X0200 DC XL2'0200'
2647 0300 2648 623 X0300 DC XL2'0300'
2649 0400 264A 624 X0400 DC XL2'0400'
625
264B 0000 264C 626 ENTT DC XL2'0000'
264D 2868 264E 627 ADMICD DC AL2(UNUSD)
628
264F C5C9E3C8C5D940C3 267F 629 DC
2657 C1D9C440D9C5C1C4 629
265F C5D940D6D940C6C9 629
2667 D3C540D4E4E2E340 629
266F C2C540E4E2C5C440 629
2677 C1E240D3D6C1C4C5 629
267F D9 629
2680 40C4C5E5C9C3C5 2686 630 ERR6 DC CL07' DEVICE'
2687 C3C1D9C440E2C5D8 2687 631 ERR7 DC CL49'CARD SEQUENCE IS OUT OF ORDER
268F E4C5D5C3C540C9E2 631
2697 40D6E4E340D6C640 631
269F D6D9C4C5D9404040 631
26A7 4040404040404040 631
26AF 4040404040404040 631
26B7 40 631
26B8 C3C1D9C440C9C340 26E8 632 ERR8 DC CL49'CARD ID IS NOT FC7
26C0 C9E240D5D6E340C6 632
26C8 C3F7404040404040 632
26D0 4040404040404040 632
26D8 4040404040404040 632
26E0 4040404040404040 632
26E8 40 632

MOVE IN BUFFER START ADDRESS
ADD 2 TIMES OF # OF INSTRUCTIONS
FOR ENDING ADDRESS FOR DUMP
PRINT PROGRAM
START ADDRESS
ENDING ADDRESS
OPERATOR PRINT
MICROCODE LOAD OK
HALT \* A4 \*\*\*\*\*
IF SSW04 IS ON
TEST FOR 893 LOADED BY FC8
MICROCODE HAS LOADED
TERMINATE SECTION
RETURN TO PGM FC8
PRINT ATTACHMENT CHECK

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8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

26E9	4040404040C3D6D9	2706	633	DC	CL30*	CORE IS NOT LARGE ENOUGH *
26F1	C540C9E240D5D6E3		633			
26F9	40D3C1D9C7C540C5		633			
2701	D5D6E4C7C840		633			
2707	E2C5E340C4C140E2	2737	634	ERR9	DC	CL49*SET DA SWITCH 04 WILL GIVE A DUMP
270F	E6C9E3C3C840F0F4		634			
2717	40E6C9D3D340C7C9		634			
271F	E5C540C140C4E4D4		634			
2727	D740404040404040		634			
272F	4040404040404040		634			
2737	40		634			
2738	C5C9E3C8C5D940D5	2768	635	ERRF	DC	CL49*EITHER NO END CARD OR PROGRAM TOO LONG
2740	D640C5D5C440C3C1		635			
2748	D9C440D6D940D7D9		635			
2750	D6C7D9C1D440E3D6		635			
2758	D640D3D6D5C74C40		635			
2760	4040404040404040		635			
2768	40		635			

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8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

			637			
			637			MAP OF MICROCODE
			639	DS	CL1	0 BYTE RESERVED
			640	DS	CL7	1-7 PART NUMBER
			641	DS	CL1	8 RESERVED
			642	DS	CL6	9-14 EC NUMBER
			643	DS	CL1	15 EC SUFFIX
			644	DS	32XL2	16-79 OP DECODE DATA
			645	DS	XL2	80-81 NUMBER OF MICROINSTRUCTIONS
			646	DS	XL4	82-85 CHECK SUM
			647	DS	CL170	86-255 UNUSED
			648	DS	16XL256	256-XXXX MICROCODE
			649	DS	XL80	
			650			
			651			***** MESSAGES *****
			652			
			653			
38B9	D4C3E240D3D6C1C4	38C9	653	MCSLOD	DC	CL17*MCS LOADING ERROR*
38C1	C9D5C740C5D9D9D6		653			
38C9	D9		653			
38CA	C1E3E3C1C3C8D4C5	38DA	654	AD*	DC	CL17*ATTACHMENT CHECK *
38D2	D5E340C3C8C5C3D2		654			
38DA	40		654			
38DB	C6C3F74040D4C9C3	38FC	655	OPR1	DC	CL34*FC7 MICRO-CODE LOADER PROGRAM *
38E3	D9D660C3D6C4C540		655			
38EB	D3D6C1C4C5D940D7		655			
38F3	D9D6C7D9C1D44040		655			
38FB	4040		655			
33FD	E2C5D3C5C3E340D6	3930	656		DC	CL52*SELECT OPTION BY PUTTING XX VALUE INTO DATA SWITCHES*
3905	D7E3C9D6D540C2E8		656			
390D	40D7E4E3E3C9D5C7		656			
3915	40E7E740E5C1D3E4		656			
391D	C540C9E3D640C4		656			
3925	C1E3C140E2E6C9E3		656			
392D	C3C8C5E2		656			
3931	40C1D5C440D9C5E2	3943	657	OPR2	DC	CL19* AND RESETING HALT*
3939	C5E3E3C9D5C740C8		657			
3941	C1D3E3		657			
3944	C6C3F74040D4C9C3	395F	658	MSGLD	DC	CL28*FC7 MICRO-CODE BEING LOADED*
394C	D9D660C3D6C4C540		658			
3954	C2C5C9D5C740D3D6		658			
395C	C1C4C5C4		658			
3960	F0F1406040D3D6C1	3994	659	OPR3	DC	CL53*01 - LOAD AND SENSE CONTROL STORE & PRINT OBJECT CODE*
3968	C440C1D5C440E2C5		659			
3970	D5E2C540C3D6D5E3		659			
3978	D9D6D340E2E3D6D9		659			
3980	C5405040D7D9C9D5		659			
3988	E340D6C2D1C5C3E3		659			
3990	40C3D6C4C5		659			
3995	F0F2406040D3D6C1	398A	660	OPR4	DC	CL38*02 - LOAD AND SENSE CONTROL STORE ONLY*
399D	C440C1D5C440E2C5		660			
39A5	D5E2C540C3D6D5E3		660			
39AD	D9D6D340E2E3D6D9		660			
39B5	C540D6D5D3E8		660			
39B8	F0F3406040E2C5D5	39E1	661	OPR5	DC	CL39*03 - SENSE AND PRINT FC7 CONTROL STORE*
39C3	E2C540C1D5C440D7		661			
39CB	D9C9D5E340C6C3F7		661			
39D3	4040C3D6D5E3D9D6		661			
39DB	D340E2E3D6D9C5		661			
39E2	C5D5E2E4D9C540C4	3A0F	662		DC	CL46*ENSURE DATA DECK FC7 FOR MICRO-LOADER IS *
39EA	C1E3C140C4C5C3D2		662			
39F2	40C6C3F740C6D6D9		662			
39FA	404040404040D4C9		662			
3A02	C7D9D660D3D6C1C4		662			
3A0A	C5D940C9E240		662			
3A10	C9D540D7D9C9D4C1	3A38	663	OPR6	DC	CL41* IN PRIMARY HOPPER. RESET HALT TO CONTINUE*
3A18	D9E840C8D6D7D7C5		663			
3A20	D96B40D9C5E2C5E3		663			
3A28	40C8C1D3E340E3D6		663			

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8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

3A30 40C3D6D5E3C9D5E4      663
3A38 C5                      663
3A39 E2C5E340C41E3C1 3A67 664 OPRX DC    CL47'SET DATA SWITCH TO 05 - TRY TO RELOAD MICROCODE'
3A41 40E2E6C9E3C3C840      664
3A49 E3D640F0F5406040      664
3A51 E3D9E840E3D640D9      664
3A59 C5D3D6C1C440D4C9      664
3A61 C3D9D6C3D6C4C5        664
3A68 C6D9D6D440C3D6D9 3A96 665 OPRY DC    CL47'FROM CORE, OTHERWISE SECTION TERMINATES
3A70 C56B40D6E3C8C5D9      665
3A78 E6C9E2C540E2C5C3      665
3A80 E3C9D6D540E3C5D9      665
3A88 D4C9D5C1E3C5E240      665
3A90 40404040404040        665
3AA9 666 LEVEL EQU    **18
3A97 D4C9C3D9D66CC3D6 3AC5 667 OPRK DC    CL47'MICRO-CODE (LEVEL X) LOADED SUCCESSFULLY
3A9F C4C5404DD3C5E5C5      667
3AA7 D340E75D40D3D6C1      667
3AAF C4C5C440E2E4C3C3      667
3AB7 C5E2E2C6E4D3D3E8      667
3ABF 40404040404040        667
3AC6 40C1C4C4D9404040 3ACD 668 DC    CL8' ADDR
3ACE 40404040C3D6C4C5 3AF5 669 DC    CL40' CODE READ INTO CORE
3AD6 40D9C5C1C440C9D5      669
3ADE E3D640C3D6D9C540      669
3AE6 4040404040404040      669
3AEE 4040404040404040      669
3AF6 40404040C3D6C4C5 3B1D 670 OPRT DC    CL40' CODE SENSED
3AFE 40E2C5D5E2C5C440      670
3B06 4040404040404040      670
3B0E 404040404040C4040      670
3B16 40404040C5D9D940      670
3B1E 0000000000000000 3B75 671 BUF DC    XL88'00'
3B26 0000000000000000      671
3B2E 0000000000000000      671
3B36 00C0000000000000      671
3B3E 0000000000000000      671
3B46 0000000000000000      671
3B4E 0000000000000000      671
3B56 0000000000000000      671
3B5E 0000000000000000      671
3B66 0000000000000000      671
3B6E 0000000000000000      671
3B76 40                      672 DC    CL1'
3B77 0000                    673 QOUNT DC    XL2'00'
674
675 *****
676 * SUBROUTINE DUMP *
677 *****
678 * CALLING SEQUENCE *
679 *
680 * B DUMP *
681 * DC AL2(STARTING ADDRESS) *
682 * DC AL2(ENDING ADDRESS) *
683 *****
684
3B79 34 08 3C0D
3B7D 34 02 3C09
3B79
3B81 C2 02 3B79
3B85 B4 01 8C
3B88 B5 01 94
3B8B 9C 01 9B 01
3B8F 9C 01 9D 03
3B93 D2 01 04
3B96 34 01 3C0D
3B9A AC 01 A7 9D
3B9E AF 01 A7 9B
685 DUMP ST DMP100+3,ARR SAVE RETURN ADDRESS
686 ST SXR2+3,XR2 SAVE XR2
687 USING DUMP,XR2
688 LA DUMP,XR2
689 ST SXR1+3(,XR2),XR1 SAVE XR1
690 L DMP100+3(,XR2),XR1 LOAD PARAMETER ADDRESS
691 SA(,XR2),1(2,XR1) SAVE STARTING ADDRESS
692 MVC EA(,XR2),3(2,XR1) SAVE ENDING ADDRESS
693 LA 4(,XR1),XR1 INCREMENT RETURN ADDRESS
694 ST DMP100+3,XR1 CHANGE RETURN ADDRESS
695 LOOPD MVC TEM(,XR2),EA(2,XR2) PRESERVE END ADDRESS
696 SLC TEM(,XR2),SA(2,XR2) GET LENGTH COUNT FOR PRINT

```

8930 FC7 MICRO-CODE LOADER PROGRAM

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

3BA2 AD 01 A7 A5      697
3BA6 F2 84 34      698 CLC TEM(,XR2),D000F(2,XR2) 16 CHARACTERS TO PRINT ?
3BA9 AC 00 4C A7      699 JH OVER16
3BAD AC 01 4E 9B      700
3BB1 AE 00 4C A3      701 MVC COUNT(,XR2),TEM(1,XR2) PUT LENGTH COUNT IN PRINT
3BB5 AE 01 4E A7      702 MVC ADDR(,XR2),SA(2,XR2) RM ADDRESS
3BB9 AC 01 9B 4E      703 ALC COUNT(,XR2),ONED(1,XR2)
3BBD AE 01 9B A3      704 ALC ADDR(,XR2),TEM(2,XR2)
3BC1 C0 87 021E      705 MVC SA(,XR2),ADDR(2,XR2) CURRENT STARTING ADDRESS
3BC5 00      706 ALC SA(,XR2),ONED(2,XR2)
3BC6 0000      707
3BC8 3C40      708 B UNPACK READY DATA FOR PRINTING
3BC9 710 ADDR DC XL1'00'
3C00 711 DC AL2(BUFFAR)
3C01 712
3BCA AC 00 5E 4C      713 MVC LPRINT(,XR2),COUNT(1,XR2)
3BCE AE 00 5E 5E      714 ALC LPRINT(,XR2),LPRINT(1,XR2) DOUBLE PRINT COUNT
3C02 715
3C03 716 B PRINT PRINT DATA
3C04 717 DC XL1'01'
3C05 718 LPRINT DC XL1'00'
3C06 719 DC AL2(BUFFAR)
3C07 720
3C08 721 J DONE
3C09 722
3C0A F2 87 20      723 OVER16 ALC SA(2,XR2),D000F(,XR2) ADD FIFTEEN
3C0B AE 01 9B A5      724 MVC LUNPK(,XR2),SA(2,XR2)
3C0C AE 01 9B A3      725 ALC SA(,XR2),ONED(2,XR2)
3C0D 726
3C0E C0 87 021E      727 B UNPACK
3C0F 10      728 DC IL1'16'
3C10 0000      729 LUNPK DC XL2'0000'
3C11 3C40      730 DC AL2(BUFFAR)
3C12 731
3C13 C0 87 021A      732 B PRINT PRINT DATA
3C14 01      733 DC XL1'01'
3C15 20      734 DC IL1'32'
3C16 3C40      735 DC AL2(BUFFAR)
3C17 E0 87 21      736 B LOOPD(,XR2) RELOOP
3C18 737
3C19 C0 87 021A      738 DONE B PRINT
3C01 17      739 DC XL1'17'
3C02 740
3C03 C2 01 0000      741 SXR1 LA *-*,XR1 RESTORE XR1
3C04 C2 02 0000      742 SXR2 LA *-*,XR2 RESTORE XR2
3C05 743
3C06 C0 87 0000      744 DNP100 B *-* RETURN TO MAIN PROGRAM
3C07 745
3C08 C0 87 022A      746 B LOAD
3C09 40      747 RESTRT DC XL1'40'
3C10 0000      748 SA DC XL2'0000'
3C11 0000      749 EA DC XL2'0000'
3C12 0000      750 SB DC XL2'0000'
3C13 0001      751 EB DC XL2'0000'
3C14 000F      752 ONED DC XL2'0001'
3C15 0000      753 D000F DC XL2'000F'
3C16 0000      754 TEM DC XL2'0000'
3C17 0000000000000000 3C40 755 BUFFAR DC XL32'00'
3C18 0000000000000000 755
3C19 0000000000000000 755
3C20 0000000000000000 755
3C21 0000000000000000 755
3C22 0000000000000000 756
3C23 0000000000000000 756
3C24 0000000000000000 757 *
3C25 0000000000000000 758 * THIS SUBROUTINE WILL DETERMINE WHETHER TO RETURN TO OCP
3C26 0000000000000000 759 * OR TO TERMINATE THE SECTION.
3C27 0000000000000000 760 *
3C28 0000000000000000 761 LINKK EQU *

```





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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Includes entries for ERR7, HCE0, HDB0B, IAR2, INCTDA, INPUT, INTPND, KOMPX, LENGTH, LEVEL, LINK, LINKA, LINKK, LIO1, LOAD, LOADC, LOAT, LOOP, LOOPD, LOOPOP, LOOP1, LOOP2, LPRINT, LPTR, LUNPK, MCSC, MCSLOD, MICOD, MICOD2, MLTAC, MOVE, MSDAR, MSGG, MSGH, MSGHOB, MSGLD, MSGNA, MSGNA, NEG1, NEG3, NEXDAT, NG256, NINST, NOCORE, NOOP, NORM, NOTRDY, NOTSRT, NRFP, NUMIOK, ONDE, ONED, ONET, ONO, OPDEC, OPREG, OPRK.

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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Includes entries for OPR2, OPR3, OPR4, OPR5, OPR6, OP32, ORA, OFC, ORD, ORE, ORF, ORP, ORV, ORI, OUTGO, OVER16, PACK, PAR, PART#, PATCH, PATCHE, PATCHH, PATCHR, PATCHX, PFFX, PPATCH, PRINT, PRINTQ, PRINTX, PSR, PIIAR, QDUNT, QQ, QUICK, RESTR, RTNO1, SA, SAVSNS, SB, SBYTE0, SBYTE2, SBYTE5, SECSW, SENSE, SEQ, SETRET, SETUP, SETU1, SIOI, SIZE, SNSDEC, SNSPRT, SNS1, SSW00, SSW01, SSW10, SSW2C, SSW2F, STARR.

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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Lists various symbols and their cross-references.

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

8930 FC7 MICRO-CODE LOADER PROGRAM

OBJECT CARD LISTING

THE CHARACTER INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

Main body of object card listing containing assembly code and comments across multiple columns.

8930 FC7 MICRO-CODE LOADER PROGRAM

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+SKS|OMX7XBAT:T /0HE11D820UA0-D \*VLEA|A-4 LOECOD BFT0+C-DBFS;:C-D BFS;:C D8633P0-D YEL6 9/D89300021
T+SLO LOM( DBE-B A|A00G 8A|A0X>-B A|A0X>XEG /YBCGX )C D8HC00C0D8B1CO MCE\*#|L\_60H\*BG-H 863X 00 89300022
T+SMJM-8A|(X0664 A|B 0G7MD--0 IN 8H 0AINH8E-8 IN 8G 0 INUVH 0AINX 8F-0 IJ88HCMAINH 5 SM 8BY89300023
T+SNK064 C2-66 803\_3C-DBPC0\*C D #;C0-C-D#;C0-0-D #IL6AINLB L\_(( D VP88AIN6#; 8AIN4 #;:C \*D<89300024
T+S0G/0H; C /0H; C /0H EAV-#)-HGNE8A|A6 8G-8A|A-8G-0AIEG 8E 0AIE88F 8A|A6 8G 8 LID89300025
T+SPB L0Q|A05 KO W(6HV.64| C2-66 803\_30H\*BG/ C\_ EOH\*BG/ C\_0H\* BF-EQ+7P /2K\*0H\* BF-D 03089300026
T+SP.3ZX0H\*BF-\* ?+Z5 /0HSS;H0 BR |6MW6< AI-U8 SR 0H\*TE34BIUC2-JY < KQHL;Q+ KQHIUO + KQ 31<89300027
T+S08BBR<0H\*#;L6 N C /0HEAS0;1LX -T UC1POH\*BYW U+ -BC\*BE|E\*5HA\* \*0H\*BF-QJ+(, /0H SS;:C 85089300028
T+SR30H\*866 BE-D - C 6 YE<PI88TE6MCC0)X D6(XE0\*LE6MCO6MC F2)|E6(LU8)< 0XN 9+H ;HM89300029
T+SE>1J 0;I 4\*S A1<PRE<LE9\*XC1\*| A6\*J 8XP09<PN08N 2;I 5>LT6(SF6(S R1<PRE6DA 6DA 6DA ED 41\*89300030
T+SSZ6DA 6DA 6DA 08GR1DC11DCI8UC N5>( 1X|76DA 6DA 6DA 6DA 6DA 6DA 6DA 6D 0R089300031
T+S\*U6DA 6<|06\*N 2;I 5)8T6(|A6\*~ E6<PN5)LG2DCS1;: 1<E 8>8I88|H6|C 46+8I4\*( 18XV1MC A6<6 3I889300032
T+S)-9(LP6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6DA 6D 889300033
TBB)Y6DA 6DA 6DA J6<89300034
T+TT35<|S6(|00\*L 15\*) 1)XR5\_XA8=| A08TM1)PT6<|H1\*| K6<8C\*4A 5<XC6)R -0\*SD1MCL5XGD1)V 5\*U \*8089300035
T+TU>5X-R0)J 6DA 8XPL1\*|T6(\$P88X 05MCB;DCP9+|T2)P G6+~X6+PA4=LE6<X N8\*R 1<GT0MCS9XX T08- 09889300036
T+TVZ1;I 0)PD6(X E8XPT88XN14CH0)| T1X|76DCM2\*|R5WC C5XLE6<.E2)PG6(| 00\*LE1|C16FA 4\*S A1D 6Q889300037
T+TWU0)PD6+.E5;. E6<|05;|R5\_ ( 8>| 06\*N MDPC6\*XN84C 00\_GE0=( 0\*SD1-C 26FA 4\*S8A1DCA5\*J 8XM 1H-89300038
T+TX-5;.E6<|05;| R5\_ ( 8>|06\*N 5\_P L;|C36FA 8XFN8XN 0)PD6(-R2)PT6<S C\*4A 0\*S8N8\*XD44C S8\*Q :Q889300039
T+TYE6+PE5;.U6\*N 1<GT0MCD1\*|K6<S C\*4CF5\_V 6DA 6DC M2\*|R5WCL5XGD1)V 2;I 2)N 5\*XIS<G R;D \*H689300040
T+TZN2(\$P58PREAC R1;.E84CH0)|T6+| 06<|05;|I5;LE8XP T6<LAB8E 8>8I88| H6+|06|C56FA 8\*X Y6<+ 3Q689300041
T+TD65UCR1|00\*J 5<XC6)8C5XLE1\_X 05DCC5\_XEE4CO88T E6;8I8XN 8XPC88X 05NCT1)XM2)PA88P S6D JI889300042

8930 FC7 MICRO-CODE LOADER PROGRAM

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96
T+.6DA 6DA 5(X C6)R-0\*SD1MA(48P V1)( 955 4\*8A1KP D6+.U08|E8>.F9(| L:DA 6DA 6DA 0=L D6M ~/089300043
T+TXF6DA 6DA 0\*8 DIMCR1\*GD6<XN8\*R 0\*8R1MA 6DA 6DA 6DA 6DA 6DA 6DA 6<|01<N 8XPN8XP D6D \*D089300044
T+\_A6DA 6DA 6DA 6DA 6DA 6DA 6<P R6M ..... 31889300045
T+\_8 ..... D C6 H| 4 \*H\*89300046
T+7( H8B\*HB+7W 4 Q25 RK\* RAX F ) \*HAAC>A| 6X E; ),OFXW:4AZ:P2/CK X D2X, E+W:8 LH+ > H8 LQ89300047
T+T7Z2:0AW4:> R> TOH\*BG- C1 , A ;LH8 PV# /0HE 6 86|HGHH8AW:OX PE 8,-F8Y8BG /86 86< 0.Y89300048
T+T0\_/0HE K 86+B GH\*BG /YPO-D <H B C /0 0H\*8MU ..... 8:<89300049
T+T1Y ..... <B G /YAE170H\*BF-Q ?|I# /0MSSEL /0H 05<XC6)R-0\*SD1MC N5>< \*0H89300050
T+T2T6(|00\*LE1(X E1XPRE+|06+.E0=| 15\_N =|X16<XF6<P R6)SRBUCW1)XE6<P N0\*SU5;|E6\*PD( - \*EC 0JH89300051
T+T3; C3;C6D87T3 P8YEN0H\*BG-D8:C3 40H\*BG-8R93310H+ BF8QR|6KI9<BG SH I9<BG|DD H ..... 7IH89300052
T+TARDAD K /<<CD DA <TD0UC08FG 08MA(2<PXP8NC5>( :\*PR5U + L3Y|+Y + C2U|A3 /0 0-D YE-H 1K089300053
T+T5M/CLB L6N( - \*U-0C|0M\*T 0A|Q- X>T2 |N#E T6B|H )10 |Q0 . 'L \* C56 CX |QE# B + \*Z089300054
T+T6||08K 6GS -G 2- -8/35;0H\*1| 8 A|Q-'TXBA|088-C5 ;0H '(C2G|P- /34 8 ..... \* KYU89300055
TAC6M/0 ..... K/U89300056
T+U8-|RLP0;|C2DC F5\_XM0;(| 1)XR5\_X T2<N 1\_SL4\*8W2)P G6(-A88)H1;I 9XP R1MCA1<LE1<GD1(V 1<D P:889300057
TBUBDB8GX9=-X6+- X9=\* ..... L -89300058
T+X :\*\*\*\*\* ..... L0489300059
T+XA5\*\*\*\*\* ..... 08M89300060
T+XB0\*\*\*\*\* ..... 1Y\*89300061
T+XC,\*\*\*\*\* ..... PQM89300062
TD7C\*\*\*\*\* ..... 06889300063
E\*\*\*E7\*=-DC\*PHS =\*7M6F| | C FX ASC R A S0 Q ..... 0932060873C 626753.689300064
LAST PAGE





8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 8943, including instructions like CLI, BNE, TBN, and comments such as 'TEST FOR PGM LOOP' and 'ENABLE ATTACHMENT'.

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8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 8943, including instructions like DC, B, MVI, and comments such as 'SET PASS 1 INDICATION' and 'TEST DEVICE 5E OR 5F'.

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8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 8943, including instructions like DC, B, MVI, and comments such as 'GO PRINT HEADING' and 'START OF ROUTINE 04'.

8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 8943, including instructions like DC, TBN, MVI, and comments such as 'TEST SSW 15 ON' and 'START OF ROUTINE 05'.

8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routines RTN06, 07, and 08, including instructions like MVC, MVI, B, DC, and comments such as 'THIS ROUTINE CHECKS THE VARIOUS WRITE OPTIONS...'

8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routines RTN08, 09, and 0A, including instructions like CLC, JNE, B, DC, and comments such as 'THIS ROUTINE TESTS THAT DATA CHECKS IN THE DEVICE CAN BE DETECTED...'





8943 DA FUNCTIONAL TESTS

8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routines OD, OE, and OF.

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for routines RTN10 and RTN11, including a keyboard function test routine.



8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 1460-1536.

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Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for functional tests 153A-160D.

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Table with 4 columns: ERR LOC, OBJECT CODE, ADDR STMT, SOURCE STATEMENT. Contains assembly code for routine 11, including checks for ENTER, routine 12 start, and routine 13 initialization.

Table with 4 columns: ERR LOC, OBJECT CODE, ADDR STMT, SOURCE STATEMENT. Contains assembly code for routine 12, including cursor address setting, ripple address initialization, and data conversion subroutines.



8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for diagnostic tests, including instructions like MVC, LIO, CLC, and comments such as 'MOVE IN THE LENGTH' and 'TEST BUSY'.

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8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for diagnostic tests, including instructions like MVC, LIO, CLC, and comments such as 'GOACKR B ERROR' and 'SETUP THE FOLLOWING 4 BYTES AS FOLLOWS'.

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8943 DA FUNCTIONAL TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
IC9E OC 01 25F8 2653 1746 MVC SPFLD(2),SEL SET UP TO SELECT
1CA4 OC 01 25FA 2605 1747 MVC PSDEV(2),CURDEV SET TO SELECT CURRENT DEVICE
1CAA CO 87 1AB4 1748 B DOSIO GO SELECT DEVICE
1CAE 0008 1CAF 1749 DC AL2(ENQ-SELPOL)
1CB0 431F 1CB1 1750 DC AL2(XMITE)
1CB2 25FB 1CB3 1751 DC AL2(ENQ)
1CB4 4D 01 01 263D 1752 CLC 1(2,XR1),ACKO TEST RESPONSE = ACKO
1CB9 F2 81 54 1753 JE SELECR OKAY IF SO
1CBC 4D 01 01 263B 1754 CLC 1(2,XR1),RVI TEST RESPONSE = RVI
1CC1 F2 81 0F 1755 JE GETST IF SO, GO GET STATUS
1CC4 4D 01 01 2639 1756 CLC 1(2,XR1),WACK TEST RESPONSE = WACK
1CC9 F2 81 31 1757 JE PWACK
1758
1CCC 34 08 1D13 1759 GETPS ST SELECR+3,ARR STORE RETURN ADDRESS
1CDO F2 87 04 1760 J GOERR
1CD3 3C 20 262A 1761 GETST MVI ERR,RVIS SET UNEXPECTED STATUS
1CD7 CO 87 22A7 1762 GOERR B ERROR GO PRINT RVI OR EOT
1CDB CO 87 1C39 1763 FETCHS B DOPOL GO GET STATUS
1CDF 38 10 2658 1764 TBN POLFLG,X'10' WAS STATUS RECEIVED
1CE3 F2 90 22 1765 JF OHOH BAD IF NOT
1766
1CE6 CO 87 1D27 1767 PSTAT B FORMAT GO PRINT STATUS BITS REC'D
1CEA CO 87 18C6 1768 B GOACK GO SEND ACK1
1CEE CO 87 021A 1769 SP6HLT B PRINT GO SPACE 6
1CF2 96 1CF2 1770 DC XL1'96'
1CF3 CO 87 0222 1771 B HALT GO HALT
1CF7 891F 1CF8 1772 DC XL2'891F' HALT \*\*\*\*IF\*\*\*\*
1CF9 CO 87 0216 1773 B LINK GO TO NEXT ROUTINE
1774
1CFD 3C 0B 262A 1775 PWACK MVI ERR,WACKE SET WACK MESSAGE
1D01 CO 87 22A7 1776 B ERROR
1D05 F2 87 08 1777 J SELECR
1D08 3C 0C 262A 1778 OHOH MVI ERR,UNK SET UNKNOWN RESPONSE
1D0C CO 87 22A7 1779 B ERROR
1780
1D10 CO 87 0000 1781 SELECR B \*-\* RETURN TO USER
1782 \*\*\*\*\*
1783 \* SUBROUTINE TO PRINT POLL STATUS BITS \*\*\*\*\*
1784 \*\*\*\*\*
1785
1D14 34 08 1DA4 1786 PEXPS ST FORMRT+3,ARR STORE RETURN ADDRESS
1D18 OC 01 2BE5 25CF 1787 MVC STATME(2),DEVICE SET UP MESSAGE TO PRINT EXPECTED
1D1E OC 1D 2C03 2BE5 1788 MVC STATFL(30),STATME MOVE TO MESSAGE
1D24 F2 87 16 1789 J FINEXP JUMP TO FINISH
1D27 34 08 1DA4 1790 FORMAT ST FORMRT+3,ARR STORE RETURN ADDRESS
1D2B OC 01 28C7 25CF 1791 MVC STATMS(2),DEVICE PUT DEVICE IN HEADING
1D31 OC 1D 2C03 2BC7 1792 MVC STATFL(30),STATMS PUT HEADING IN PRINT FIELD
1D37 OC 01 2FF9 2658 1793 MVC WORK(2),POLST MOVE POLL STATUS TO WORK SPACE
1D3D 34 01 1D9C 1794 FINEXP ST FXR1+3,XR1 SAVE XR1
1D41 34 02 1DA0 1795 ST FXR2+3,XR2 SAVE XR2
1796
1D45 CO 87 1DA5 1797 B PSROUT GO PRINT IT
1798
1D49 3C 01 1D5A 1799 MVI TBIT+1,1 SET BIT MASK TO START AT BIT 7
1D40 3C 01 1D5B 1800 MVI TBIT+2,1 SET DISPLACEMENT TO 1
1D51 C2 01 2FF8 1801 LA WORK-1,XR1 POINT XR1 TO POLL STATUS HI BYTE
1D55 C2 02 2B1A 1802 LA STTAB,XR2 POINT XR2 TO BIT NAME TABLE
1803
1D59 78 00 00 1804 TBIT TBN \*-\*(,XR1),\*-\* TEST STATUS BIT ON
1D5C F2 90 09 1805 JF NEXTB IF NOT, UPDATE TO NEXT
1D5F 2C 0F 2C03 0F 1806 MVC STATFL,15(16,XR2) MOVE IN BIT NAME TO MESSAGE
1D64 CO 87 1DA5 1807 B PSROUT GO PRINT IT
1808
1D68 0E 00 1D5A 1D5A 1809 NEXTB ALC TBIT+1(1),TBIT+1 SHIFT MASK BIT LEFT ONE
1D6E E2 02 10 1810 LA 16(,XR2),XR2 UPDATE XR2 TO POINT TO NEXT ENTRY
1D71 3D 01 1D5B 1811 CLI TBIT+2,1 ARE WE DOING HI BYTE YET?
1D75 F2 01 14 1812 JNE HI JUMP IF NOT
1D78 3D 40 1D5A 1813 CLI TBIT+1,X'40' DID WE JUST DO LAST BIT OF LO BYTE

8943 DA FUNCTIONAL TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT
1D7C CO 01 1D59 1814 BNE TBIT IF NOT, GO DO THIS BIT
1815
1D80 3C 00 1D5B 1816 MVI TBIT+2,0 SET DISPLACEMENT FOR HI BYTE
1D84 3C 02 1D5A 1817 MVI TBIT+1,2 SET MASK FOR 1ST BIT OF HI BYTE
1D88 CO 87 1D59 1818 B TBIT GO TEST NEXT BIT
1819
1D8C 3D 10 1D5A 1820 HI CLI TBIT+1,X'10' AT END YET?
1D90 CO 01 1D59 1821 BNE TBIT IF NOT, TEST NEXT BIT
1822
1D94 CO 87 021A 1823 B PRINT SPACE 1 LINE
1D98 91 1D98 1824 DC XL1'91'
1D99 C2 01 0000 1825 FXR1 LA \*-\*,XR1 RESTORE XR1
1D9D C2 02 0000 1826 FXR2 LA \*-\*,XR2 RESTORE,XR2
1DA1 CO 87 0000 1827 FORMRT B \*-\* RETURN TO USER
1828
1DA5 34 08 1D8A 1829 PSROUT ST PSROUT+3,ARR STORE RETURN ADDRESS
1DA9 CO 87 021A 1830 B PRINT PRINT LINE
1DAD 81 1DAD 1831 DC XL1'81'
1DAE 1E 1DAE 1832 DC IL1'30'
1DAF 2C03 1D80 1833 DC AL2(STATFL)
1DB1 OC 1D 2C03 2C04 1834 MVC STATFL(30),STATBL CLEAR PRINT FIELD FOR NEXT ENTRY
1DB7 CO 87 0000 1835 PSROUT B \*-\* RETURN
1836 \*\*\*\*\*
1837 \* SUBROUTINE TO READ BUFFER \*\*\*\*\*
1838 \*\*\*\*\*
1839 \* B READBF BRANCH TO SUBROUTINE
1840 \* DC XL1'XX' XX = FLAGS
1841 \* DC XL2'AAAA' AAAA = CURSOR ADDRESS
1842 \*
1843 \* FLAGS BIT 0 = 1 = PATTERN IS NULLS
1844 \* BIT 1 = 1 = PATTERN IS RIPPLE DATA
1845 \* BIT 2 = 1 = PATTERN IS A SINGLE CHAR. REPEATED
1846 \* BIT 3 = 1 = USING PATTERN 1
1847 \* BIT 4 = 1 = USING UPPER/LOWER CASE PATTERN
1848 \* BIT 5 = 1 = USING PATTERN 2
1849 \* BIT 6 = 1 = DOING RTN 13 EXERCISE
1850 \*
1851 READBF ST READBR+3,ARR STORE RETURN ADDRESS
1852 B FILLFF FILL EXPECTED BUFFER WITH FF
1853 MVC EXPBUF+3(4),RDBE PUT IN EXPECTED RESULTS
1854 ST RDBXR1+3,XR1 STORE XR1
1855 ST RDBXR2+3,XR2 STORE XR2
1856 L READBR+3,XR1 GET PARAMETERS ADDR
1857 MVC RBFLG,0(1,XR1) FETCH FLAGS
1858 MVC EXPBUF+9,2(2,XR1) FETCH CURSOR ADDRESS
1859 MVC EXPBUF+7(4),RBEX1 FILL IN READ HEADING
1860 MVC EXPBUF+7(1),NOAID FORCE NO AID CHAR
1861 MVC EXPBUF+6(1),CURDEV INSERT DEVICE IN EXP. RESULT
1862 MVI EXPBUF+256,X\*26' INSERT ETB
1863 MVI TCOUNT,1 SET COUNTER TO 1
1864 TBN RBFLG,X'80' TEST FOR DATA = NULLS
1865 JT NULLS
1866 TBN RBFLG,X'40' TEST FOR RIPPLE DATA
1867 JT RIPPLE
1868 TBN RBFLG,X'20' TEST FOR SINGLE CHAR WRITTEN
1869 JT RAP
1870 TBN RBFLG,X'10' TEST FOR PATTERN 1
1871 JT PAT1
1872 TBN RBFLG,X'08' IS THIS UPPER/LOWER CASE PATTERN?
1873 JT UPLWR
1874 TBN RBFLG,X'04' TEST FOR PATTERN 2
1875 JT PAT2 JUMP IF SO
1876 TBN RBFLG,X'02' TEST FOR RTN 13 EXERCISE
1877 JT R13EX
1878 \* TEMP --- TO BE FILLED IN FOR OTHERS
1879 R13EX LA EXPBUF+10,XR2 POINT XR2 TO 1ST ADDR TO BE FILLED
1880 MVC STDAT(2),RIPST SET UP DATA START ADDRESS
1881 L CURRIP,XR1 POINT XR1 TO DATA









8943 DA FUNCTIONAL TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

239F F2 01 06 2286 JNE TERR40
23A2 OC 16 2590 2A71 2287 MVC LOGMSG(23),MPMG5
23A8 3D 40 262A 2288 TERR40 CLI ERR,EOTC
23AC F2 01 06 2289 JNE TERROB
23AF OC 09 2590 293C 2290 MVC LOGMSG(10),EOTMSG
23B5 3D 08 262A 2291 TERROB CLI ERR,WACKE
23B9 F2 01 06 2292 JNE TERROC
23BC OC 0E 2590 2959 2293 MVC LOGMSG(15),UNWACK
23C2 3D 0C 262A 2294 TERROC CLI ERR,UNK
23C6 F2 01 06 2295 JNE GETSET
23C9 OC 0F 2590 2969 2296 MVC LOGMSG(16),UNKOW
2297
23CF CO 87 021E 2298 GETSET B UNPACK GO UNPACK CAR
23D3 02 23D3 2299 DC IL1'2'
23D4 2620 23D5 2300 DC AL2(SCAR)
23D6 25A8 23D7 2301 DC AL2(LOGCAR)
2302
23D8 CO 87 021E 2303 B UNPACK GO UNPACK TAR
23DC 02 23DC 2304 DC IL1'2'
23DD 2622 23DE 2305 DC AL2(STAR)
23DF 25B2 23E0 2306 DC AL2(LOGTAR)
2307
23E1 CO 87 021E 2308 B UNPACK GO UNPACK SAR
23E5 02 23E5 2309 DC IL1'2'
23E6 2624 23E7 2310 DC AL2(SSAR)
23E8 25BC 23E9 2311 DC AL2(LOGSAR)
2312
23EA CO 87 021E 2313 B UNPACK GO UNPACK STATUS
23EE 02 23EE 2314 DC IL1'2'
23EF 2626 23F0 2315 DC AL2(SSSTAT)
23F1 259E 23F2 2316 DC AL2(LOGST)
2317
23F3 OC 00 2402 262A 2318 MVC HEAD(1),ERR MOVE ERROR TO HEADER
23F9 CO 87 021A 2319 B PRINT GO PRINT 1ST MESSAGE
23FD C2 23FD 2320 DC XL1'2'
23FE 30 23FE 2321 DC IL1'48'
23FF 2591 2400 2322 DC AL2(MSGBLK)
2401 8900 2402 2323 HEAD DC XL2'8900'
2403 CO 87 021A 2324 B PRINT GO PRINT CAR, TAR, SAR & STATUS
2407 82 2407 2325 DC XL1'82'
2408 2B 2408 2326 DC IL1'43'
2409 25BC 240A 2327 DC AL2(LOC SAR)
240B 30 08 262A 2328 CLI ERR,DATER TEST FOR DATA ERROR
240F CO 01 2427 2329 BNE TEINC BRANCH IF NOT
2413 38 04 2E94 2330 TBN RBLFG,X'04' TEST DOING ERASE ALL UNPROT.
2417 CO 90 1FF8 2331 BF PXREX
241B CO 87 021A 2332 B PRINT GO PRINT MESSAGE
241F 02 241F 2333 DC XL1'02'
2420 1B 2420 2334 DC IL1'27'
2421 2A8C 2422 2335 DC AL2(EAUMG)
2423 CO 87 1FF8 2336 B PXREX
2427 3D 10 262A 2337 TEINC CLI ERR, INCOR TEST FOR INCORRECT RESPONSE
242B CO 81 1FF8 2338 BE PXREX IF SO, GO PRINT
242F 3D 15 262A 2339 CLI ERR,0DST WAS ERROR - WRONG STATUS
2433 F2 01 04 2340 JNE PXRH JUMP IF NOT
2436 CO 87 1D14 2341 B PEXPSL GO PRINT EXPECTED STATUS
2342 \* PRINT CONTENTS OF TRANSMIT/RECEIVE FIELD
243A CO 87 021A 2343 PXRH B PRINT PRINT XMIT/REC HEADING
243E 81 243E 2344 DC XL1'81'
243F 0D 243F 2345 DC IL1'13'
2440 39E5 2441 2346 DC AL2(XMRMG)
2442 OC 1F 2F80 2FCF 2347 MVC PLINE-4(32),PHEAD SET UP HEADING
2448 OC 25 2F60 2FAB 2348 MVC PLINE-36(38),PHEAD GO PRINT HEADING
244E CO 87 021A 2349 B PRINT
2452 82 2452 2350 DC XL1'82'
2453 46 2453 2351 DC IL1'70'
2454 2F80 2455 2352 DC AL2(PLINE-4)
2456 OC 01 2FD1 261A 2353 MVC HEADAD(2),LCAR INITIALIZE HEADING ADDR

8943 DA FUNCTIONAL TESTS

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

245C OC 01 2471 37C3 2354 MVC UNPKA(2),STXRP INITIALIZE UNPACK ADDRESS
2462 CO 87 021E 2355 PXRNL B UNPACK UNPACK ADDRESS
2466 02 2466 2356 DC XL1'02'
2467 2FD1 2468 2357 DC AL2(HEADAD)
2469 2F3E 246A 2358 DC AL2(PLINE-70)
246B CO 87 021E 2359 B UNPACK UNPACK DATA
246F 20 246F 2360 DC IL1'32'
2470 0000 2471 2361 UNPKA DC AL2(\*-\*) SOURCE ADDR GETS FILLED IN
2472 2F80 2473 2362 DC AL2(PLINE-4)
2474 OD 1F 2F80 2FF1 2363 CLC PLINE-4(32),FFFF TEST LINE ALL F'S
247A F2 01 09 2364 JNE PXRH PRINT IF NOT
247D OD 1F 2F60 2FF1 2365 CLC PLINE-36(32),FFFF NO PRINT IF ALL F'S
2483 F2 81 08 2366 JE NOP PRINT LINE OF DATA
2486 CO 87 021A 2367 PXRH B PRINT
248A 81 248A 2368 DC XL1'81'
248B 46 248B 2369 DC IL1'70'
248C 2F80 248D 2370 DC AL2(PLINE-4)
248E OE 01 2471 37C1 2371 NOP ALC UNPKA(2),THREE2 ADD 32 TO ADDRESS
249A OD 01 2471 37C5 2372 ALC HEADAD(2),THREE2 ADD 32 TO ADDRESS
249B CO 04 2462 2373 CLC UNPKA(2),SPXRP CHECK FOR END
24A0 CO 04 2462 2374 BNH PXRNL GO DO NEXT LINE IF NOT END
2375
24A4 CO 87 021A 2376 B PRINT GO SPACE 6
24A8 96 24A8 2377 DC XL1'96'
2378
24A9 4D 02 02 264C 2379 CLC 2(3,XR1),STATR WAS RESULT STATUS?
24AE F2 01 09 2380 JNE TSTHLT JUMP IF NOT
24B1 CO 87 1D27 2381 B FORMAT GO PRINT STATUS DECODE
24B5 CO 87 021A 2382 B PRINT GO SPACE 6
24B9 96 24B9 2383 DC XL1'96'
2384
24BA 3D 20 262A 2385 TSTHLT CLI ERR,RVIS WAS IT RVI TO SELECT
24BE F2 81 11 2386 JE PHMSG GO PRINT MESSAGE IF SO
24C1 3D 40 262A 2387 CLI ERR,EOTC WAS IT EOT TO COMMAND
24C5 F2 81 0A 2388 JE PHMSG GO PRINT MESSAGE IF SO
2389
24C8 CO 87 0222 2390 HLTERR S HALT GO HALT
24CC 8900 24CD 2391 ERRHLT DC XL2'8900' \*\*\*\*\*HALT CODE GETS FILLED IN\*\*\*\*\*
24CE CO 87 0216 2392 B LINK GO TO NEXT ROUTINE
2393
24D2 CO 97 021A 2394 PHMSG B PRINT PRINT MESSAGE TO RESET HALT
24D6 86 24D6 2395 DC XL1'86'
24D7 21 24D7 2396 DC IL1'33'
24D8 2D61 24D9 2397 DC AL2(RSTHMG)
24DA OC 00 24E5 24CD 2398 MVC STHLT(1),ERRHLT MOVE IN HALT CODE
24E0 CO 87 0222 2399 B HALT
24E4 8900 24E5 2400 STHLT DC XL2'8900' HALT CODE GETS FILLED IN
2401
24E6 CO 87 0000 2402 ERRORR B \*-\* RETURN TO USER
2403
2404 \*\*\*\*\*
2405 \* SUBROUTINE TO CHECK FOR MODEL 4 AND DEVICE 40 \*\*\*\*\*
2406 \*\*\*\*\*
2407
2408 \* THIS ROUTINE CHECKS FOR THE CONSOLE DEVICE (40) ON A MODEL 4
2409 \* IF SO, TEST PATTERNS AND KEYBOARD ROUTINES ARE SKIPPED.
2410 \* HOWEVER, IF SSW 28 IS TURNED ON, THIS TEST IS IGNORED.
2411
2412 CHMODX ST MODXR+3,ARR STORE RETURN ADDRESS
2413 TBN SBYTES,SSW28 TEST SSW 28 ON
2414 JT MODXR SKIP THIS TEST IF SO
2415 CLI CURDEV,X'40' CHECK FOR DEVICE 40
2416 JNE MODXR OUT IF NOT
2417 CLI X'200',C'B' TEST FOR MODEL 4
2418 BE LINK SKIP ROUTINE IF SO
2419 MODXR B \*-\* RETURN
2420

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

2421 *****
2422 * INTERRUPT ROUTINE *****
2423 *****
2424
2508 34 01 253A 2425 INT2 ST X1+3,XR1 SAVE XR1
250C 34 02 253E 2426 ST X2+3,XR2 SAVE XR2
2510 34 04 261C 2427 ST PSRW,PSR SAVE PSR
2514 35 04 262C 2428 L ZERO,PSR INITIALIZE PSR TO ZERO
2518 C1 50 255A 2429 TSTAT TIO ERRATC,ATTCHK TEST FOR ATTACHMENT CHECK
251C C1 89 2520 2430 TIO GOON,X'89' TEST FOR DA OP END INTERRUPT
2431
2520 C1 88 254A 2432 GOON TIO UNITC,NORDUC TEST FOR UNIT CHECK
2524 C1 8C 252F 2433 TIO I01,X'8C' TEST FOR INTERRUPT PENDING
2528 3C 03 262A 2434 MVI ERR,INPN ERROR, INTERRUPT SHOULD BE PND.
252C F2 87 04 2435 J IEXIT EXIT
252F C1 8B 2552 2436 I01 TIO ITBER,X'8B' TEST FOR ITB INTERRUPT
2437
2533 3C 00 2610 2438 IEXIT MVI INTFLG,0 SET INTERRUPT OCCURRED INDICATION
2537 C2 01 0000 2439 X1 LA *-*,XR1 RESTORE XR1
253B C2 02 0000 2440 X2 LA *-*,XR2 RESTORE XR2
253F 35 04 2618 2441 L PSRW,PSR RESTORE PSR
2442
2543 F3 88 01 2443 SID X'01',CNTRL RESET THE INTERRUPT
2546 C0 87 2508 2444 B INT2 TAKE NEXT INTERRUPT
2445
2446 * ERRORS
2447 UNITC MVI ERR,UNITCH SET UNIT CHECK
2448 B IEXIT EXIT
2449 ITBER MVI ERR,ITBE SET ITB ERROR
2450 B IEXIT EXIT
2451 ERRATC MVI ERR,ATTCH SET ATTACHMENT CHECK
2452 B IEXIT IEXIT

```

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

2454 *****
2455 * ERROR LOGOUT *****
2456 *****
2562 2457 LOG EQU *
256A 2458 LOGDEV DC CL9'DEVICE XX'
2458
256B 4040404040404040 2590 2459 LOGMSG DC 38CL1'
2573 4040404040404040 2459
257B 4040404040404040 2459
2583 4040404040404040 2459
258B 4040404040404040 2459
2591 40 2591 2460 MSGBLK DC CL1'
2592 4040E2E3C1E3E4E2 259E 2461 LOGST DC CL13' STATUS=XXXX'
259A 7EE7E7E7E7 2461
259F 4040C3C1D97EE7E7 25A8 2462 LOGCAR DC CL10' CAR=XXXX'
25A7 E7E7 2462
25A9 4040E3C1D97EE7E7 25B2 2463 LOGTAR DC CL10' TAR=XXXX'
25B1 E7E7 2463
25B3 4040E2C1D97EE7E7 25BC 2464 LOGSAR DC CL10' SAR=XXXX'
25BB E7E7 2464
2465
2466 *****
2467 * DATA FIELDS AND CONSTANTS *****
2468 *****
2469
258D 0227F5 258D 2470 WRT EQU *
25BF 2471 WRTFLD DC XL3'0227F5' STX,ESC,ER/WR (GETS CHANGED TO WR)
25C0 5F 25C0 2472 WCC DC XL1'5F' WCC - DO EVERYTHING 40 CHAR PRINT
25C1 110000 25C3 2473 WRTADR DC XL3'110000' SBA, ADDR GETS FILLED IN
25C4 1DE913 25C6 2474 DC XL3'1DE913' SF, PROT, HI INT., MOD., IC
25C7 C4C5E5C9C3C540E7 25CF 2475 DEVICE DC CL9'DEVICE XX' DEVICE GETS FILLED IN
25CF E7 2475
25D0 1DC1 25D1 2476 DC XL2'1DC1' SF, UNPROT., MOD.
25D2 005C005C005C005C 25E9 2477 DC 6XL4'005C005C'
25DA 005C005C005C005C 2477
25E2 005C005C005C005C 2477
25EA 09E3D5F0F2 25EE 2478 DC CL5'RTN02'
25EF 114040 25F1 2479 DC XL3'114040'
25F2 03 25F2 2480 ENRT DC XL1'03' SBA TO RESET BUFFER ADDR TO ZERO
2481 ETX
25F3 37FF32320000 25F3 2482 SELPOL EQU * SELECT/POLL MESSAGE
25F9 0000 25F8 2483 SPFLD DC XL6'37FF32320000' POLL OR SLECT GETS FILLED IN
25FB 2D 25FA 2484 PSDEV DC XL2'0000' DEVICE GETS FILLED IN
25FB 2D 25FB 2485 ENQ DC XL1'2D' ENQ - ENDS POLL OR SELECT
2486
25FC 0227F603 25FC 2487 RDMOD EQU * READ MODIFIED COMMAND
25FF 2488 RDMODE DC XL4'0227F603' STX,ESC,RD MOD,ETX
2489
2600 0227F203 2600 2490 RDB EQU * READ BUFFER COMMAND
2603 2491 RDBE DC XL4'0227F203'
2492
2604 0000 2605 2493 CURDEV DC XL2'0' CURRENT DEVICE
2606 0000 2607 2494 LINE DC XL2'0' CURRENT LINE POINTER (LOW BYTE)
2608 2609 2609 2495 INXR2 DC AL2(ONFLG-4) START OF 'ON' FLAGS
2496
2497 * KEEP THE FOLLOWING 2 BYTE FLAG BYTES TOGETHER AND IN ORDER
2498 * BITS 2-7 OF HI BYTE USED FOR DEVICES C2-C7
2499 * BITS 2-7 OF LO BYTE USED FOR DEVICES D2-D7
2500
260A 00000000 260D 2501 ONFLG DC XL4'0' DEVICE AVAILABLE FLAGS -----1
2502
260E 00 260E 2503 RESTFL DC XL1'0' RESTART FLAG = FF IF PGM IS LOOPING
260F 00 260F 2504 DONE DC XL1'0' = FF WHEN ALL DEVICES ARE DONE
2610 00 2610 2505 INTFLG DC XL1'0' INTERRUPT FLAG
2611 0000 2612 2506 BCNT DC XL2'0' BUSY COUNTER
2613 0000 2614 2507 DVBCNT DC XL2'0' DEVICE BUSY COUNTER
2615 2508 2616 2508 AINT2 DC AL2(INT2) ADDRESS OF INTERRUPT ROUTINE
2617 0000 2618 2509 PSRW DC XL2'0' PSR STORAGE AREA

```



8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test entries for functional tests.

8943 DA FUNCTIONAL TESTS

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic test entries for functional tests, including status bit names and printer checks.





CROSS-REFERENCE

1950 1963

0928 0937 0961 0985 1014 1046 1234

1551 1583 1619 2443  
1449\* 1456\* 1458 1475

\* 1538

\* 1575

\* 1076 1149 1172\*  
1986\*  
\* 0541 0710 0768 0817 1056 1069 1248 1485\* 1488\*  
1493\* 1494\* 1501 1515 1716 1747 1861 2131 2415  
\* 1434 1436\* 1881  
2328

2143 2146 2202  
0776  
2218\*

0253\*  
0353 0416 0525 0568 0569 1363 1516 1517 1518

0279\* 0310 1503\*  
0274 0321  
0674 1074 1302 1763 2138 2168 2201  
1733 1737  
0498 0526 0532 0571 0577 0589 0624 0667 0685  
0807 0824 0834 1060 1114 1120 1144 1155 1164 - -  
1243 1279 1310 1337 1365 1370 1417 1667 1720\* \*  
1959 2158 2173 2178  
1639\*

2135\* 2136 2162 2162\* 2163\* 2166 2196 2196\* 2204

14MAY76  
825035

PROG  
PAGE

32-A

3:2A

6869\*  
57677787

SBA  
119  
SF-~~ALT~~ TR PROTECTED/NORMAL INTENSITY

C7C8C9\*

D7D8D9\*

E8E9\*  
5F6F7F8F

SBA  
15-9  
SF-~~ALT~~ TR UNPROTECTED/NORMAL INTEN.

E0E1\*

SBA  
19-9  
SF-~~ALT~~ TR PROTECTED/NORMAL INTENSITY

SBA  
23-9  
SF-~~ALT~~ TR UNPROTECTED/NORMAL INTENSITY

SBA  
27-9  
SF-~~ALT~~ TR PROTECTED/NORMAL INTENSITY

SBA  
32-0

END OF MESSAGE (ALT.CODES)

SBA  
39-0  
SF-~~ALT~~ TR UNPROTECTED/NORMAL INTENSITY

IN SEPT CURSOR  
S B  
4 7  
S F -~~ALT~~ TR HIGH INT/ PROTECTED  
S E -~~ALT~~ TR ON ADDR TO FOLLOW  
S T -~~ALT~~ TR AREA FOR SELECTION ADDR



8943 DA FUNCTIONAL TESTS

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
314C	D9D54B		2697	
			2698 *	
314F	11	314F	2699	DC XL1'11' SBA
3150	C540	3151	2700	DC XL2'C540' ADDRESS--320
3152	F24B40D709C5E2E2	3179	2701	DC CL40'2. PRESS CANCEL(OR PA2)TO DISCONNECT CPU'
315A	40C3C1D5C3C5D34D		2701	
3162	D6D940D7C1F25DE3		2701	
316A	D640C4C9E2C3D6D5		2701	
3172	D5C5C3E340C3D7E4		2701	
			2702 *	
317A	11	317A	2703	DC XL1'11' SBA
317B	C6D2	317C	2704	DC XL2'C6D2' ADDRESS--402
317D	C1D5C440D3C5C1E5	31A1	2705	DC CL37'AND LEAVE PATTERN FOR OFF-LINE USAGE.'
3185	C540D7C1E3E3C5D9		2705	
318D	D540C6D6D940D6C6		2705	
3195	C660D3C9D5C540E4		2705	
319D	E2C1C7C54B		2705	
			2706 *	
31A2	11	31A2	2707	DC XL1'11' SBA
31A3	C7D6	31A4	2708	DC XL2'C7D6' ADDRESS--470
			2709 *	
31A5	1DEB	31A6	2710	DC XL2'1DEB' SF-HIGH INTENSITY/PROTECTED
31A7	C1C4D960	31AA	2711	DC CL4'ADR-' ADDRESS OF DVC WILL FOLLOW
31AB	F6F0F4F0	31AE	2712 A1	DC CL4'6040' DEVICE ADDR GETS FILLED IN
			2713 *	
31AF	1D40	31B0	2714	DC XL2'1D40' SF-NORMAL INT/UNPROTECTED
			2715 *	
31B1	19	31B1	2716	DC XL1'19' ETX
31B2	03	31B2	2717	DC XL1'03' EORD1
			2718	EQU * ORD1A
31B3	C227F55F	31B6	2719	DC XL4'0227F55F' STX,ESC,ER/WR,WCC START PRINT ON
31B7	1140C6	31B9	2720	DC XL3'1140C6' SBA ADR 6
31B8	E3C5E2E340D7C1E3	31D0	2721	DC CL23'TEST PATTERN SEQUENCING'
31C2	E3C5D9D540E2C5D8		2721	
31CA	E4C5D5C3C9D5C7		2721	
31D1	11C150	31D3	2722	DC XL3'11C150' SBA ADR 80
31D4	F14B40E3D640C3C1	31FB	2723	DC CL40'1. TO CALL NEXT PATTERN - AFTER PRINTING'
31DC	D3D340D5C5E7E340		2723	
31E4	D7C1E3E3C5D9D540		2723	
31EC	6040C1C6E3C5D940		2723	
31F4	D7D9C9D5E3C9D5C7		2723	
31FC	11C2E2	31FE	2724	DC XL3'11C2E2' SBA ADR 162
31FF	E2E3D6D7E26B40D6	321E	2725	DC CL32'STOPS, OPEN COVER, THEN CLOSE IT'
3207	D7C5D540C3D6E5C5		2725	
320F	D96B40E3C8C5D540		2725	
3217	C3D3D6E2C540C9E3		2725	
321F	11C3F2	3221	2726	DC XL3'11C3F2' SBA ADR 242
3222	E6C9E3C8C9D540F5	3232	2727	DC CL17'WITHIN 5 SECONDS.'
322A	40E2C5C3D6D5C4E2		2727	
3232	4B		2727	
3233	11C540	3235	2728	DC XL3'11C540' SBA ADR 320
3236	F24B40C9C640C3D6	325C	2729	DC CL39'2. IF COVER IS LEFT UP MORE THAN 5 SEC.'
323E	E5C5D940C9E240D3		2729	
3246	C5C6E340E4D740D4		2729	
324E	D6D9C540E3C8C1D5		2729	
3256	40F540E2C5C34B		2729	
325D	11C6D2	325F	2730	DC XL3'11C6D2' SBA ADR 162
3260	D7C7D440E6C9D3D3	3284	2731	DC CL37'PGM WILL TERMINATE AND LEAVE PATTERN.'
3268	40E3C5D9D4C9D5C1		2731	
3270	E3C540C1D5C440D3		2731	
3278	C5C1E5C540D7C1E3		2731	
3280	E3C5D9D54B		2731	
3285	11C7D6	3287	2732	DC XL3'11C7D6' SBA ADR -- 470
3288	1DEB	3289	2733	DC XL2'1DEB' SF HI INT/PROT
328A	C1C4D960	328D	2734	DC CL4'ADR-'
328E	F6F04040	3291	2735	DC CL4'60 ' DEVICE ADDRESS GETS FILLED IN
3292	1D40	3293	2736	DC XL2'1D40' SF - NORM INT./UNPROT.
3294	19	3294	2737	DC XL1'19'

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
3295	03	3295	2738	EORDIA DC XL1'03' ETX
			2739	
			2740	
3296	0227	3296	2741	DC XL2'0227' * BEGIN ORDERS FOR TEST 2
3298	F5	3298	2742	DC XL1'F5' STX-ESC
3299	5F	3299	2743	DC XL1'5F' CMD--ERASE,WRITE
			2744 *	WCC SOUND ALARM/RESTORE KEYBOARD/
			2745 *	START PRINT/40 CHAR LINE
329A	11	329A	2745	DC XL1'11' SBA
329B	C150	329C	2746	DC XL2'C150' ADR--80
329D	1D60	329E	2747	DC XL2'1D60' PROTECTED,NORMAL INTENSITY
329F	C1C2C3C4C5C6C7C8	32B9	2748	DC CL27'ABCDEFGHIJKLMNPNRSTUVWXYZ ' BEGIN MESSAGE
32A7	C9D1D2D3D4D5D6D7		2748	
32AF	D8D9E2E3E4E5E6E7		2748	
32B7	E8E940		2748	
			2749 *	
32BA	1D6C	32BB	2750	DC XL2'1D6C' PROTECTED,NON DISPLAY
32BC	D5D6D540C4C9E2D7	32C6	2751	DC CL11'NON DISPLAY' FOUND IN NON-DISPLAY AREA
32C4	D3C1E8		2751	
			2752 *	
32C7	11	32C7	2753	DC XL1'11' SBA
32C8	C260	32C9	2754	DC XL2'C260' ADR--160
32CA	1D40	32CB	2755	DC XL2'1D40' UNPROTECTED,NORMAL INTENSITY
32CC	13	32CC	2756	DC XL1'13' INSERT CURSOR
32CD	C3D6D7E840C1C2D6	32E7	2757	DC CL27'COPY ABOVE IN THIS LINE
32D5	E5C540C9D540E3C8		2757	
32DD	C9E240D3C9D5C540		2757	
32E5	404040		2757	
			2758 *	
32E8	1D40	32E9	2759	DC XL2'1D40' NORMAL INT/UNPROTECTED
32EA	C9D5E2C5D9E340C3	32F2	2760	DC CL9'INSERT CK'
32F2	D2		2760	
32F3	0000	32F4	2761	DC XL2'0000' 2 NULL CHARACTERS
			2762 *	
32F5	1D60	32F6	2763	DC XL2'1D60' PROTECTED,NORMAL INTENSITY
32F7	11	32F7	2764	DC XL1'11' SBA
32F8	C3F0	32F9	2765	DC XL2'C3F0' ADR--240
32FA	1D68	32FB	2766	DC XL2'1D68' PROTECTED,HIGH INTENSITY
32FC	4F7C7B5B6C	3300	2767	DC CL5' @#%&' SPECIAL
3301	4A	3301	2768	DC XL1'4A' CHARACTERS (CENT SIGN)
3302	505C4D5D6D4E	3307	2769	DC CL6'&*()*_+ TEST
3308	5A	3308	2770	DC XL1'5A' * (EXCLAMATION)
3309	7A	3309	2771	DC CL1': ' * (QUOTE)
330A	7F	330A	2772	DC XL1'7F' *
330B	4C6E6F607E5F5E7D	3313	2773	DC CL9'<>?=-;:!'/' *
3313	61		2773	
			2774 *	
3314	1DF8	3315	2775	DC XL2'1DF8' PROTECTED,HIGH INTENSITY
3316	FOF1F2F3F4F5F6F7	3323	2776	DC CL14'0123456789,-.A' NUMERIC FIELD
331E	F8F96B4B60C1		2776	
			2777 *	
3324	11	3324	2778	DC XL1'11' SBA
3325	C540	3326	2779	DC XL2'C540' ADR--320
3327	1DC8	3328	2780	DC XL2'1DC8' UNPROTECTED,HIGH INTENSITY
3329	C3D6D7E840C1C2D6	3340	2781	DC CL24'COPY ABOVE IN THIS LINE ' INSTRUCTIONS TO CONSOLE
3331	E5C540C9D540E3C8		2781	
3339	C9E240D3C9D5C540		2781	
3341	1D08	3342	2782	DC XL2'1D08' NUMERIC,UNPROTECTED, HIGH INTENSITY
			2783 *	
3343	11	3343	2784	DC XL1'11' SBA
3344	C5E8	3345	2785	DC XL2'C5E8' ADR--360
3346	1D60	3347	2786	DC XL2'1D60' PROTECTED,NORMAL INTENSITY
			2787 *	
3348	11	3348	2788	DC XL1'11' SBA
3349	C650	334A	2789	DC XL2'C650' ADR--400
334B	1DE4	334C	2790	DC XL2'1DE4' PROTECTED,NORMAL INTENSITY,SELECTOR
			2791 *	
334D	6FE2C5D340D7C5D5	3359	2792	DC CL13'2SEL PEN TEST' DEFINE SEL PEN AREA
3355	40E3C5E2E3		2792	

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
335A	000000	335C	2793	DC XL3'000000'	3 NULL CHARACTERS
335D	1DE8	335E	2794	DC XL2'1DE8'	PROTECTED,HI INTEN,SELECTOR PEN
335F	6EE2C5D340D7C5D5	336B	2795	DC CL13'>SEL PEN TEST'	DEFINE SEL PEN FIELD
3367	40E3C5E2E3		2795		
			2796 *		
336C	11	336C	2797	DC XL1'11'	SBA
336D	C7D6	336E	2798	DC XL2'C7D6'	ADR--470
			2799 *		
336F	1DE8	3370	2800	DC XL2'1DE8'	SF-ATTR HIGH INT/ PROTECTED
3371	C1C4D960	3374	2801	DC CL4'ADR--'	
3375	00000000	3378	2802	DC XL4'00000000'	NULLS FOR SEL ADDR
3379	1DE8	337A	2803	DC XL2'1DE8'	SF-ATTR HIGH INT/PROTECTED
337B	03	337B	2804	DC XL1'03'	ETX
			EORD2		
			ORD3		
337C	0227	337D	2806	DC XL2'0227'	STX-ESC
337E	F5	337E	2807	DC XL1'F5'	CMD--ERASE,WRITE
337F	5F	337F	2808	DC XL1'5F'	HALT
			2809 *		
3380	11	3380	2810	DC XL1'11'	SBA
3381	4040	3382	2811	DC XL2'4040'	ADR--0
3383	3C	3383	2812	DC XL1'3C'	RA - REPEAT TO ADDR
3384	40E8	3385	2813	DC XL2'40E8'	ADDR
3386	C5	3386	2814	DC CL1'E'	CHAR TO BE REPEATED
3387	C8	3387	2815	DC CL1'H'	
			2816 *		
3388	11	3388	2817	DC XL1'11'	SBA
3389	C14F	338A	2818	DC XL2'C14F'	ADR--79
338B	C8C8	338C	2819	DC CL2'HH'	
			2820 *		
338D	11	338D	2821	DC XL1'11'	SBA
338E	C1F7	338F	2822	DC XL2'C1F7'	ADR--119
3390	C8C8	3391	2823	DC CL2'HH'	
			2824 *		
3392	11	3392	2825	DC XL1'11'	SBA
3393	C25F	3394	2826	DC XL2'C25F'	ADR--159
3395	C8C8	3396	2827	DC CL2'HH'	
			2828 *		
3397	11	3397	2829	DC XL1'11'	SBA
3398	C3C7	3399	2830	DC XL2'C3C7'	ADR--199
339A	C8C8	339B	2831	DC CL2'HH'	
			2832 *		
339C	11	339C	2833	DC XL1'11'	SBA
339D	C36F	339E	2834	DC XL2'C36F'	ADR--239
339F	C8C8	33A0	2835	DC CL2'HH'	
			2836 *		
33A1	11	33A1	2837	DC XL1'11'	SBA
33A2	C4D7	33A3	2838	DC XL2'C4D7'	ADR--279
33A4	C8C8	33A5	2839	DC CL2'HH'	
			2840 *		
33A6	11	33A6	2841	DC XL1'11'	SBA
33A7	C47F	33A8	2842	DC XL2'C47F'	ADR--319
33A9	C8C8	33AA	2843	DC CL2'HH'	
			2844 *		
33AB	11	33AB	2845	DC XL1'11'	SBA
33AC	C5E7	33AD	2846	DC XL2'C5E7'	ADR--359
33AE	C8C8	33AF	2847	DC CL2'HH'	
			2848 *		
33B0	11	33B0	2849	DC XL1'11'	SBA
33B1	C64F	33B2	2850	DC XL2'C64F'	ADR--399
33B3	C8C8	33B4	2851	DC CL2'HH'	
			2852 *		
33B5	11	33B5	2853	DC XL1'11'	SBA
33B6	C6F7	33B7	2854	DC XL2'C6F7'	ADR--439
33B8	C8	33B8	2855	DC CL1'H'	
			2856 *		
33B9	11	33B9	2857	DC XL1'11'	SBA
33BA	C35B	33BB	2858	DC XL2'C35B'	ADR--219
33BC	F0F0	33BD	2859	DC CL2'00'	

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	
			2860 *		
33BE	11	33BE	2861	DC XL1'11'	SBA
33BF	C4C3	33C0	2862	DC XL2'C4C3'	ADR--259
33C1	F0F0	33C2	2863	DC CL2'00'	
			2864 *		
33C3	11	33C3	2865	DC XL1'11'	SBA
33C4	C460	33C5	2866	DC XL2'C460'	ADR--288
33C6	E3C5E2E340D7C1E3	33DC	2867	DC CL23'TEST PATTERN FOR	3277-1'
33CE	E3C5D9D540C6D6D9		2867		
33D6	40F3F2F7F760F1		2867		
			2868 *		
33D0	11	33DD	2869	DC XL1'11'	SBA
33DE	C54F	33DF	2870	DC XL2'C54F'	ADR--335
33E0	C1D3C9C7D5D4C5D5	33E8	2871	DC CL9'ALIGNMENT'	
33E8	E3		2871		
			2872 *		
33E9	11	33E9	2873	DC XL1'11'	SBA
33EA	C5F0	33EB	2874	DC XL2'C5F0'	ADR--368
33EC	5C	33EC	2875	DC CL1'*'	
			2876 *		
33ED	1D40	33EE	2877	DC XL2'1D40'	SF-ATTR UPR,NI,NSP,369
33EF	13	33EF	2878	DC XL1'13'	INSERT CURSOR
33F0	E4D5D7D9D6E3C5C3	33FF	2879	DC CL16'UNPROTECTED DATA'	
33F8	E3C5C440C4C1E3C1		2879		
			2880 *		
3400	11	3400	2881	DC XL1'11'	SBA
3401	C6C6	3402	2882	DC XL2'C6C6'	ADR--390
3403	1D60	3404	2883	DC XL2'1D60'	SF-ATTR PRO,NI,NSP
3405	5C	3405	2884	DC CL1'*'	
			2885 *		
3406	11	3406	2886	DC XL1'11'	SBA
3407	C6F8	3408	2887	DC XL2'C6F8'	ADR--440
3409	3C	3409	2888	DC XL1'3C'	REPEAT
340A	C75F	340B	2889	DC XL2'C75F'	ADR--479
340C	C5	340C	2890	DC CL1'E'	CHAR TO BE REPEATED
340D	C5	340D	2891	DC CL1'E'	E FOR LAST PLACE IN BUFFER
			2892 *		
340E	11	340E	2893	DC XL1'11'	SBA
340F	C66D	3410	2894	DC XL2'C66D'	ADR--429
3411	1DE8	3412	2895	DC XL2'1DE8'	SF-ATTR HIGH INT/PROTECTED
3413	C1C4D960	3416	2896	DC CL4'ADR--'	ADDRESS TO FOLLOW
3417	00000000	341A	2897	DC XL4'00000000'	STORAGE AREA FOR SELECTION ADDR
3418	1D60	341C	2898	DC XL2'1D60'	SF-ATTR NORMAL INT/PROTECTED
341D	03	341D	2899	DC XL1'03'	ETX
			EORD3		
			ORD4		
341E	0227	341F	2901	DC XL2'0227'	STX-ESC
3420	F5	3420	2902	DC XL1'F5'	CMD-ERASE,WRITE
3421	7F	3421	2903	DC XL1'7F'	WCC-SOUND ALARM/RESTORE KEYBOARD?
			2904 *		START PRINT/80 CHARS PER LINE
3422	3CC150	3424	2905	DC XL3'3CC150'	REPEAT TO ADDR
3425	C5	3425	2906	DC CL1'E'	80 E CHARACTERS
3426	C8	3426	2907	DC CL1'H'	CHAR 81=H
			2908 *		
3427	11	3427	2909	DC XL1'11'	SBA
3428	C25F	3429	2910	DC XL2'C25F'	ADR--159
342A	C6C8	342B	2911	DC CL2'HH'	
			2912 *		
342C	11	342C	2913	DC XL1'11'	SBA
342D	C36F	342E	2914	DC XL2'C36F'	ADR--239
342F	C8C8	3430	2915	DC CL2'HH'	
			2916 *		
3431	11	3431	2917	DC XL1'11'	SBA
3432	C47F	3433	2918	DC XL2'C47F'	ADR--319
3434	C8C8	3435	2919	DC CL2'HH'	
			2920 *		
3436	11	3436	2921	DC XL1'11'	SBA
3437	C64F	3438	2922	DC XL2'C64F'	ADR--399
3439	C8C8	343A	2923	DC CL2'HH'	

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	
			2924 *			
343B	11	343B	2925	DC	XL1'11'	SBA
343C	C75F	343D	2926	DC	XL2'C75F'	ADR--479
343E	C8C8	343F	2927	DC	CL2'HH'	
			2928 *			
3440	11	3440	2929	DC	XL1'11'	SBA
3441	C7E8	3442	2930	DC	XL2'C7E8'	ADR--488
3443	E3C5E2E340D7C1E3	3459	2931	DC	CL23'TEST PATTERN FOR 3277-2'	
344B	E3C5D9D540C6D6D9		2931			
3453	40F3F2F7F760F2		2931			
			2932 *			
345A	11	345A	2933	DC	XL1'11'	SBA
345B	C86F	345C	2934	DC	XL2'C86F'	ADR--559
345D	C8C8	345E	2935	DC	CL2'HH'	
			2936 *			
345F	11	345F	2937	DC	XL1'11'	SBA
3460	C87E	3461	2938	DC	XL2'C87E'	ADR--574
3462	C1D3C9C7D5D4C5D5	346A	2939	DC	CL9'ALIGNMENT'	
346A	E3		2939			
			2940 *			
346B	11	346B	2941	DC	XL1'11'	SBA
346C	C97F	346D	2942	DC	XL2'C97F'	ADR--639
346E	C8C8	346F	2943	DC	CL2'HH'	
			2944 *			
3470	11	3470	2945	DC	XL1'11'	SBA
3471	4B4F	3472	2946	DC	XL2'4B4F'	ADR--719
3473	C8C8	3474	2947	DC	CL2'HH'	
			2948 *			
3475	11	3475	2949	LC	XL1'11'	SBA
3476	4C5F	3477	2950	DC	XL2'4C5F'	ADR--799
3478	C8C8	3479	2951	DC	CL2'HH'	
			2952 *			
347A	11	347A	2953	DC	XL1'11'	SBA
347B	4CE7	347C	2954	DC	XL2'4CE7'	ADR--807
347D	5C	347D	2955	DC	CL1''	
			2956 *			
347E	1D40	347F	2957	DC	XL2'1D40'	UNPROTECTED, NORMAL INTENSITY
3480	13	3480	2958	DC	XL1'13'	INSERT CURSOR
3481	E4D5D7D9D6E3C5C3	3494	2959	DC	CL20'UNPROTECTED AREA	
3489	E3C5C440C1D9C5C1		2959			
3491	40404040		2959			
3495	1D60	3496	2960	DC	XL2'1D60'	PROTECTED, NORMAL INTENSITY
3497	5C	3497	2961	DC	CL1''	
			2962 *			
3498	11	3498	2963	DC	XL1'11'	SBA
3499	4D6F	349A	2964	DC	XL2'4D6F'	ADR--879
349B	C8C8	349C	2965	DC	CL2'HH'	
			2966 *			
349D	11	349D	2967	DC	XL1'11'	SBA
349E	4ED7	349F	2968	DC	XL2'4ED7'	ADR--919
34A0	FOFO	34A1	2969	DC	CL2'00'	
			2970 *			
34A2	11	34A2	2971	DC	XL1'11'	SBA
34A3	4E7F	34A4	2972	DC	XL2'4E7F'	ADR--959
34A5	C8C8	34A6	2973	DC	CL2'HH'	
			2974 *			
34A7	11	34A7	2975	DC	XL1'11'	SBA
34A8	4FE7	34A9	2976	DC	XL2'4FE7'	ADR--999
34AA	FOFO	34AB	2977	DC	CL2'00'	
			2978 *			
34AC	11	34AC	2979	DC	XL1'11'	SBA
34AD	504F	34AE	2980	DC	XL2'504F'	ADR--1039
34AF	C8C8	34B0	2981	DC	CL2'HH'	
			2982 *			
34B1	11	34B1	2983	DC	XL1'11'	SBA
34B2	D15F	34B3	2984	DC	XL2'D15F'	ADR--1119
34B4	C8C8	34B5	2985	DC	CL2'HH'	
			2986 *			

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3486	11	3486	2987	DC	XL1'11'	SBA
3487	D26F	3488	2988	DC	XL2'D26F'	ADR--1199
3489	C8C8	348A	2989	DC	CL2'HH'	
			2990 *			
348B	11	348B	2991	DC	XL1'11'	SBA
348C	D37F	348D	2992	DC	XL2'D37F'	ADR--1279
348E	C8C8	348F	2993	DC	CL2'HH'	
			2994 *			
34C0	11	34C0	2995	DC	XL1'11'	SBA
			2996 EFOR3	EQU	*	
34C1	D54F	34C2	2997	DC	XL2'D54F'	ADR--1359
34C3	C8C8	34C4	2998	DC	CL2'HH'	
			2999 *			
34C5	11	34C5	3000	DC	XL1'11'	SBA
34C6	D65F	34C7	3001	DC	XL2'D65F'	ADR--1439
34C8	C8C8	34C9	3002	DC	CL2'HH'	
			3003 *			
34CA	11	34CA	3004	DC	XL1'11'	SBA
34CB	D76F	34CC	3005	DC	XL2'D76F'	ADR--1519
34CD	C8C8	34CE	3006	DC	CL2'HH'	
			3007 *			
34CF	11	34CF	3008	DC	XL1'11'	SBA
34D0	D87F	34D1	3009	DC	XL2'D87F'	ADR--1599
34D2	C8C8	34D3	3010	DC	CL2'HH'	
			3011 *			
34D4	11	34D4	3012	DC	XL1'11'	SBA
34D5	5A4F	34D6	3013	DC	XL2'5A4F'	ADR--1679
34D7	C8C8	34D8	3014	DC	CL2'HH'	
			3015 *			
34D9	11	34D9	3016	DC	XL1'11'	SBA
34DA	5B5F	34DB	3017	DC	XL2'5B5F'	ADR--1759
34DC	C8C8	34DD	3018	DC	CL2'HH'	
			3019 *			
34DE	11	34DE	3020	DC	XL1'11'	SBA
34DF	5C6F	34E0	3021	DC	XL2'5C6F'	ADR--1839
34E1	C8	34E1	3022	DC	CL1'H'	
			3023 *			
34E2	3C4040	34E4	3024	DC	XL3'3C4040'	LAST LINE = 80
34E5	C5	34E5	3025	DC	CL1'E'	CHARS OF E'S
			3026 *			
34E6	11	34E6	3027	DC	XL1'11'	SBA
34E7	5CE5	34E8	3028	DC	XL2'5CE5'	ADR--1829
34E9	1DE8	34EA	3029	DC	XL2'1DE8'	SF-ATTR HIGH INT/PROTECTED
34EB	C1C4D960	34EE	3030	DC	CL4'ADR-	ADDR TO FOLLOW
34EF	00000000	34F2	3031	DC	XL4'00000000'	STORAGE AREA FOR SEL ADDR
34F3	1D60	34F4	3032	DC	XL2'1D60'	SF-ATTR NORMAL INT/PROTECTED
			3033 *			
34F5	03	34F5	3034	DC	XL1'03'	ETX
			3035 EORD4	EQU	*	
34F6	0227	34F7	3036	DC	XL2'0227'	STX-ESC
34F8	F5	34F8	3037	DC	XL1'F5'	CMD-ERASE,WRITE
34F9	6F	34F9	3038	DC	XL1'6F'	WCC-START PRINT/64 CHARS PER LINE/ SOUND ALARM/RESTORE KEYBOARD
			3039 *			
34FA	1D60	34FB	3040	DC	XL2'1D60'	SF/NORMAL INT/PROTECTED
34FC	C6D6D940C3D3E4E2	351D	3041	DC	CL34'FOR CLUSTERED PRINTERS DATA SHOULD'	
3504	E3C5D9C5C440D7D9		3041			
350C	C9D5E3C5D9E240C4		3041			
3514	C1E3C140E2C8D6E4		3041			
351C	D3C4		3041			
351E	40E2E3C1D9E340D5	353A	3042	DC	CL29' START NEXT LINE HERE ----->'	
3526	C5E7E340D3C9D5C5		3042			
352E	40C8C5D9C5406060		3042			
3536	60606060E		3042			
353B	C3C8C5C3D2C9D5C7	3560	3043	DC	CL38'CHECKING PROGRAM TAB/ERASE UNPROT. TO '	
3543	40D7D9D6C7D9C1D4		3043			
354B	40E3C1C261C5D9C1		3043			
3553	E2C540E4D5D7D9D6		3043			
355B	E34840E3D640		3043			

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3561	C1C4C4D961C4E4D7	357A	3044	DC	CL26*ADDR/DUP/FIELD MARK ORDERS*
3569	61C6C9C5D3C440D4		3044		
3571	C1D9D240D6D9C4C5		3044		
3579	D9F2		3044		
			3045 *		
357B	11C3F0	357D	3046	DC	XL3*11C3F0* SBA 240
357E	13	357E	3047	DC	XL1*13* INSERT CURSOR
357F	1DF8	3580	3048	DC	XL2*1DF8* AUTOSKIP, PROTECTED, HIGH INTENSITY
3581	3CC5FOF1	3584	3049	DC	XL4*3CC5FOF1* RA 320 (1'S)
			3050 *		
3585	1DC8	3586	3051	DC	XL2*1DC8* UNPROTECTED, HIGH INTENSITY
3587	3CC650	3589	3052	DC	XL3*3CC650* RA 400 (A'S)
358A	C1	358A	3053	DC	CL1*A* REPEATED CHARACTER
			3054 *		
358B	1D60	358C	3055	DC	XL2*1D60* PROTECTED, NORMAL INTENSITY
358D	3CC75F	358F	3056	DC	XL3*3CC75F* RA 479 (B'S)
3590	C2	3590	3057	DC	CL1*B* REPEATED CHARACTER
			3058 *		
3591	11	3591	3059	DC	XL1*11* SBA (1 IS TO PRECEDE PROGRAM TAB)
3592	C4D7	3593	3060	DC	XL2*C4D7* 279
3594	F1	3594	3061	DC	CL1*1* PROGRAM TAB
3595	05	3595	3062	DC	XL1*05* PROGRAM TAB
			3063 *		
3596	11C5E8	3598	3064	DC	XL3*11C5E8* SBA 360
3599	12C650	359B	3065	DC	XL3*12C650* EUA 400
			3066 *		
359C	11	359C	3067	DC	XL1*11* SBA
359D	C64A	359E	3068	DC	XL2*C64A* 394
359F	1C1E1519	35A2	3069	DC	XL4*1C1E1519* DUP/FIELD MARK/NEW LINE/EOM
			3070 *		
35A3	11	35A3	3071	DC	XL1*11* SBA
35A4	C3E6	35A5	3072	DC	XL2*C3E6* 230
35A6	1DE8	35A7	3073	DC	XL2*1DE8* SF-ATTR HIGH INT/PROTECTED
35A8	C1C4D960	35AB	3074	DC	CL4*ADR-* SELECTION ADDRESS TO FOLLOW
35AC	00000000	35AF	3075 A5	DC	XL4*00000000* STORAGE AREA FOR SELECTION ADDR
			3076 *		
35B0	1D60	35B1	3077	DC	XL2*1D60* SF-ATTR NORMAL INT/PROTECTED
35B2	03	35B2	3078	DC	XL1*03* ETX
			3079	EQU	* ORD6
35B3	0227	35B4	3080	DC	XL2*0227* STX-ESC
35B5	F5	35B5	3081	DC	XL1*F5* CMD-ERASE, WRITE
			3082 *		UNIVERSAL 3270 TEST PATTERN (RFT MESSAGE)
35B6	4F	35B6	3083	DC	XL1*4F* WCC SOUND ALARM/RESTORE KEYBOARD/
			3084 *		START PRINT/132 CHARS PER LINE
35B7	8182838485868788	35C4	3085	DC	XL14*8182838485868788898A8B8C8D8E8F*
35B8	898A8C8D8E8F		3085		
35C5	9091929394959697	35D2	3086	DC	XL14*909192939495969798999A9D9E9F*
35C0	98999A9D9E9F		3086		
			3087 *		
35D3	11	35D3	3088	DC	XL1*11* SBA
35D4	40E7	35D5	3089	DC	XL2*40E7* 39
35D6	1D60	35D7	3090	DC	XL2*1D60* SF-ATTR PROTECTED/NORMAL INTENSITY
			3091 *		
35D8	A2A3A4A5A6A7A8A9	35E4	3092	DC	XL13*A2A3A4A5A6A7A8A9AAACADAEAF*
35E0	AAACADAEAF		3092		
35E5	BABBBCCBDBEBF808B	35F1	3093	DC	XL13*BABBBCCBDBEBF808B9B9C9A9A1AB*
35E0	9B9CA0A1AB		3093		
35F2	B0B1B2B3B475B6B7	35FB	3094	DC	XL10*B0B1B2B3B475B6B7B8B9*
35FA	B879		3094		
			3095 *		
35FC	11	35FC	3096	DC	XL1*11* SBA
35FD	C14F	35FE	3097	DC	XL2*C14F* 79
35FF	1D40	3600	3098	DC	XL2*1D40* SF-ATTR UNPROTECTED/NORMAL INTEN.
			3099 *		
3601	4142434445464748	3609	3100	DC	XL9*414243444546474849*
3609	49		3100		
360A	5152535455565758	3612	3101	DC	XL9*515253545556575859*
3612	59		3101		

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3613	6263646566676869	361A	3102	DC	XL8*6263646566676869*
361B	7071727374757677	362A	3103	DC	XL10*70717273747576777879*
3623	7879		3103		
			3104 *		
			3625 3105	MIDOR6 EQU	* *--ORD6
			0072 3106	L16 EQU	
			3107 *		
3625	11	3625	3108	DC	XL1*11* SBA
3626	C1F7	3627	3109	DC	XL2*C1F7* 119
3628	1D60	3629	3110	DC	XL2*1D60* SF-ATTR PROTECTED/NORMAL INTENSITY
			3111 *		
362A	C1C2C3C4C5C6C7C8	3632	3112	DC	XL9*C1C2C3C4C5C6C7C8C9*
3632	C9		3112		
3633	D1D2D3D4D5D6D7D8	363B	3113	DC	XL9*D1D2D3D4D5D6D7D8D9*
363B	D9		3113		
363C	E2E3E4E5E6E7E8E9	3643	3114	DC	XL8*E2E3E4E5E6E7E8E9*
3644	FOF1F2F3F4F5F6F7	364D	3115	DC	XL10*FOF1F2F3F4F5F6F7F8F9*
364C	F8F9		3115		
			3116 *		
364E	11	364E	3117	DC	XL1*11* SBA
364F	C25F	3650	3118	DC	XL2*C25F* 159
3651	1D40	3652	3119	DC	XL2*1D40* SF-ATTR UNPROTECTED/NORMAL INTEN.
			3120 *		
3653	40506061C0D0E0E1	365A	3121	DC	XL8*40506061C0D0E0E1*
			3122 *		
365B	11	365B	3123	DC	XL1*11* SBA
365C	C3C7	365D	3124	DC	XL2*C3C7* 199
365E	1D60	365F	3125	DC	XL2*1D60* SF-ATTR PROTECTED/NORMAL INTENSITY
			3126 *		
3660	4A4B4C4D4E4F	3665	3127	DC	XL6*4A4B4C4D4E4F*
3666	5A5B5C5D5E5F	366B	3128	DC	XL6*5A5B5C5D5E5F*
			366C	MOR6 EQU	*
366C	6A6B6C6D6E6F	3671	3130	DC	XL6*6A6B6C6D6E6F*
3672	7A7B7C7D7E7F	3677	3131	DC	XL6*7A7B7C7D7E7F*
			3132 *		
3678	11	3678	3133	DC	XL1*11* SBA
3679	C36F	367A	3134	DC	XL2*C36F* 239
367B	1D40	367C	3135	DC	XL2*1D40* SF-ATTR UNPROTECTED/NORMAL INTENSITY
			3136 *		
367D	CACBCCDCECF	3682	3137	DC	XL6*CACBCCDCECF*
3683	DADBDCDDDEF	3688	3138	DC	XL6*DADBDCDDDEF*
3689	EAEBECEDEEF	368E	3139	DC	XL6*EAEBECEDEEF*
368F	FAFBFCFDFE	3693	3140	DC	XL5*FAFBFCFDFE*
			3141 *		
3694	11	3694	3142	DC	XL1*11* SBA
3695	C4D7	3696	3143	DC	XL2*C4D7* 279
3697	1D60	3698	3144	DC	XL2*1D60* SF-ATTR PROTECTED/NORMAL INTENSITY
3699	D561D340C3C8C5C3	36A1	3145	DC	CL9*N/L CHECK*
36A1	D2		3145		
36A2	15B515B515	36A6	3146	DC	XL5*15B515B515*
			3147 *		
36A7	11	36A7	3148	DC	XL1*11* SBA
36A8	C540	36A9	3149	DC	XL2*C540* 320
36AA	C5D6D440C3C8C5C3	36B2	3150	DC	CL9*EOM CHECK*
36B2	D2		3150		
36B3	B919	36B4	3151	DC	XL2*B919* END OF MESSAGE (ALT.CODES)
			3152 *		
36B5	11	36B5	3153	DC	XL1*11* SBA
36B6	C64F	36B7	3154	DC	XL2*C64F* 399
36B8	1D40	36B9	3155	DC	XL2*1D40* SF-ATTR UNPROTECTED/NORMAL INTENSITY
			3156 *		
36BA	13	36BA	3157	DC	XL1*13* INSERT CURSOR
36BB	11	36BB	3158	DC	XL1*11* SBA
36BC	C7D6	36BD	3159	DC	XL2*C7D6* 470
36BE	1DE8	36BF	3160	DC	XL2*1DE8* SF-ATTR HIGH INT/ PROTECTED
36C0	C1C4D960	36C3	3161	DC	CL4*ADR-* SELECTION ADDR TO FOLLOW
36C4	00000000	36C7	3162 A6	DC	XL4*00000000* STORAGE AREA FOR SELECTION ADDR
			3163 *		

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
36C8	1D40	36C9	3164	DC	XL2'1D40'
36CA	11	36CA	3165	DC	XL1'11'
36CB	C4C7	36CC	3166	DC	XL2'C4C7'
36CD	FF	36CD	3167	DC	XL1'FF'
36CE	03	36CE	3168	DC	XL1'03'
		011C	3169	EQU	*-ORD6
		00AA	3170	EQU	*-MIDOR6
		36CF	3171	DC	*
36CF	0227	36D0	3172	DC	XL2'0227'
36D1	F5	36D1	3173	DC	XL1'F5'
36D2	4F	36D2	3174	DC	XL1'4F'
36D3	D5C5E640D3C9D5C5	36E9	3175	DC	CL23'NEW LINE FUNCTION CHECK'
36DB	40C6E4D5C3E3C9D6		3175		
36E3	D540C3C8C5C3D2		3175		
			3176	*	
36EA	15	36EA	3177	DC	XL1'15'
36EB	D5C5E640D3C9D5C5	36FB	3178	DC	CL17'NEW LINE FUNCTION'
36F3	40C6E4D5C3E3C9D6		3178		
36FB	D5		3178		
			3179	*	
36FC	15	36FC	3180	DC	XL1'15'
36FD	D5C5E640D3C9D5C5	3704	3181	DC	CL8'NEW LINE'
			3182	*	
3705	15	3705	3183	DC	XL1'15'
3706	D5C5E6	3708	3184	DC	CL3'NEW'
			3185	*	
3709	15	3709	3186	DC	XL1'15'
370A	D5C5E640D3C9D5C5	3711	3187	DC	CL8'NEW LINE'
			3188	*	
3712	15	3712	3189	DC	XL1'15'
3713	D5C5E640D3C9D5C5	3723	3190	DC	CL17'NEW LINE FUNCTION'
371B	40C6E4D5C3E3C9D6		3190		
3723	D5		3190		
			3191	*	
3724	15	3724	3192	DC	XL1'15'
3725	D5C5E640D3C9D5C5	373B	3193	DC	CL23'NEW LINE FUNCTION CHECK'
372D	40C6E4D5C3E3C9D6		3193		
3735	D540C3C8C5C3D2		3193		
			3194	*	
373C	15	373C	3195	DC	XL1'15'
373D	1D4C	373E	3196	DC	XL2'1D4C'
373F	E3C8C9E240C4C1E3	3767	3197	DC	CL41'THIS DATA NOT VISIBLE/EOM AND N/L IGNORED'
3747	C140D5D6E340E5C9		3197		
374F	E2C9C2D3C561C5D6		3197		
3757	D440C1D5C440D561		3197		
375F	D340C9C7D5D6D9C5		3197		
3767	C4		3197		
			3198	*	
3768	1519	3769	3199	DC	XL2'1519'
376A	1D40	376B	3200	DC	XL2'1D40'
			3201	*	
376C	C5D5C460D6C66D04	378A	3202	DC	CL31'END-OF-MESSAGE-TERMINATES PRINT'
3774	C5E2E2C1C7C560E3		3202		
377C	C5D9D4C9D5C1E3C5		3202		
3784	E240D7D9C9D5E3		3202		
378B	19	378B	3203	DC	XL1'19'
			3204	*	
378C	15	378C	3205	DC	XL1'15'
378D	F2D5C440C5D6D440	37AE	3206	DC	CL34'2ND EOM LINE NOT ON PRINTER OUTPUT'
3795	D3C9D5C540D5D6E3		3206		
379D	40D6D540D7D9C9D5		3206		
37A5	E3C5D940D6E4E3D7		3206		
37AD	E4E3		3206		
37AF	19	37AF	3207	DC	XL1'19'
			3208	*	
37B0	11	37B0	3209	DC	XL1'11'
37B1	C7D6	37B2	3210	DC	XL2'C7D6'
37B3	1DE8	37B4	3211	DC	XL2'1DE8'

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
37B5	C1C4D960	37B8	3212	*	
37B9	00000000	37BC	3214	DC	CL4'ADR'
			3215	*	
37BD	1D40	37BE	3216	DC	XL2'1D40'
37BF	03	37BF	3217	DC	XL1'03'
37C0	0020	37C1	3218	DC	IL2'32'
37C2	421F	37C3	3219	DC	AL2(XMITRC+31)
37C4	431F	37C5	3220	DC	AL2(XMITRC+287)
37C6	C1C3C3D6D9C4C9D5	37E7	3221	DC	CL34'ACCORDING TO ROUTINE 02, DEVICE XX'
37CE	C740E3D640D9D6E4		3221		
37D6	E3C9D5C540F0F268		3221		
37DE	40C4C5E5C9C3C540		3221		
37E6	E7E7		3221		
37E8	40C9E240C140D4D6	37F4	3222	DC	CL13' IS A MODEL X'
37F0	C4C5D340E7		3222		
37F5	4040404040404040	37FC	3223	DC	CL8'
37FD	D7D9C9D5E3C5D9	3803	3224	DC	CL7'PRINTER'
3804	C4C9E2D7D3C1E8	380A	3225	DC	CL7'DISPLAY'
		380B	3226	EQU	*
380B	0227F14A3C4040	3811	3227	DC	XL7'0227F14A3C4040'
3812	5C	3812	3228	DC	CL1''
3813	11C75F1303	3817	3229	DC	XL5'11C75F1303'
381B	5CFF	3819	3230	DC	XL2'5CFF'
		381A	3231	EQU	*
381A	0227F5C2	381D	3232	DC	XL4'0227F5C2'
381E	1DE8	381F	3233	DC	XL2'1DE8'
3820	C4C5E5C9C3C540E7	3828	3234	DC	CL9'DEVICE XX'
3828	E7		3234		
3829	1DC1	382A	3235	DC	XL2'1DC1'
382B	11C150	382D	3236	DC	XL3'11C150'
382E	E3C8C9E240C9E240	3842	3237	DC	CL21'THIS IS MODIFIED DATA'
3836	D4D6C4C9C6C9C5C4		3237		
383E	40C4C1E3C1		3237		
3843	114040		3238		
3846	03		3238		
		3845	3238	DC	XL3'114040'
		3846	3239	DC	XL1'03'
		3847	3240	DC	ETX
		384A	3241	DC	*
3847	0227F5C2	384A	3241	DC	XL4'0227F5C2'
3848	1D61	384C	3242	DC	XL2'1D61'
384D	40C4C5D7D9C5E2E2	3854	3243	DC	CL8'DEPRESS'
3855	1D60	3856	3244	DC	XL2'1D60'
3857	E3C8C540C9D5C4C9	3880	3245	DC	CL42'THE INDICATED AID KEY - - - IT SHOULD BE'
385F	C3C1E3C5C440C1C9		3245		
3867	C440D2C5E8406040		3245		
386F	604060406040C9E3		3245		
3877	40E2C8D6E4D3C440		3245		
387F	C2C5		3245		
3881	40C4C5E3C5C3E3C5	38AE	3246	DC	CL46'DETECTED INSTANTLY. IF KEYS NOT INSTALLED, '
3889	C440C9D5E2E3C1D5		3246		
3891	E3D3E84B4040C9C6		3246		
3899	40D2C5E8C9E240D5		3246		
38A1	D6E340C9D5E2E3C1		3246		
38A9	D3D3C5C46B40		3246		
38AF	C4C5D7D9C5E2E240	38D9	3247	DC	CL43'DEPRESS ANY OTHER AID KEY EXCEPT CLEAR AND '
38B7	C1D5E840D6E3C8C5		3247		
38BF	D940C1C9C440D2C5		3247		
38C7	E840C5E7C3C5D7E3		3247		
38CF	40C3D3C5C1D940C1		3247		
38D7	D5C440		3247		
38DA	C6D6D3D3D6E640C5	38EA	3248	DC	CL17'FOLLOW ERROR MSG.'
38E2	D9D9D6D940D4E2C7		3248		
38EA	4B		3248		
38EB	11C25F	38ED	3249	DC	XL3'11C25F'
38EE	1DE8	38EF	3250	DC	XL2'1DE8'
38FO	11C6F8	38F2	3251	DC	XL3'11C6F8'
38F3	C4C5D7D9C5E2E240	3901	3252	DC	CL15'DEPRESS - ENTER'
38FB	6040C5D5E3C5D9		3252		
3902	03	3902	3253	DC	XL1'03'
					ETX

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3903	0000	3904	3254	CUR AID DC	XL2'0' WORK SPACE FOR CURRENT AID TABLE
3905	0227F1C2	3905	3255	AIDT2 EQU	*
3909	11C6F8	3908	3256	DC	XL4'0227F1C2' STX,ESC,WRITE, UNLOCK
390C	C4C5D7D9C5E2E240	3908	3257	DC	XL3'11C6F8' SBA
3914	6040404040404040	391F	3258	AIDM DC	CL20'DEPRESS -
391C	40404040		3258		
3920	03	3920	3259	AIDT2E DC	XL1'03' ETX
3921	0227F1C2	3921	3260	AIDT3 EQU	*
3925	11C260	3924	3261	DC	XL4'0227F1C2' STX,ESC,WRITE, UNLOCK
3928	C1C9C440D9C5C3C5	3927	3262	DC	XL3'11C260'
3930	C9E5C5C440E6C1E2	3944	3263	AIDRC DC	CL29'AID RECEIVED WAS -
3938	4060404040404040		3263		
3940	40404040		3263		
3945	40C8C5E7407DE7E7	394F	3264	HEXAID DC	CL11'(HEX 'XX') *
394D	7D5D40		3264		
3950	E3D9E840C1C7C1C9	3977	3265	DC	CL40'TRY AGAIN OR DEPRESS PA-2(CNCL) TO GO ON'
3958	D540D6D940C4C5D7		3265		
3960	D9C5E2E240D7C160		3265		
3968	F24DC3D5C3D35D40		3265		
3970	E3D640C7D640D6D5		3265		
3978	03	3978	3266	AIDT3E DC	XL1'03' ETX
3979	0227F1C2	3979	3267	AIDT4 EQU	*
397D	11C260	397C	3268	DC	XL4'0227F1C2' STX,ESC,WRITE, UNLOCK
3980	3CC6F740	397F	3269	DC	XL3'11C260' SBA
3984	03	3983	3270	DC	XL4'3CC6F740' BLANK OUT PREV MESSAGES
3985	0227F1C2	3984	3271	AIDT4E DC	XL1'03' ETX
3989	11C540	3985	3272	AIDT5 EQU	*
398C	C3D6D9D9C5C3E340	3988	3273	DC	XL4'0227F1C2' STX,ESC,WRITE, UNLOCK
3994	C1C9C440E6C1E240	3988	3274	DC	XL3'11C540' SBA
399C	D9C5C5C5C9E5C5C4	3983	3275	DC	CL40'CORRECT AID WAS RECEIVED, BUT RESPONSE
39A4	6840C2E4E340D9C5		3275		
39AC	E2D7D6D5E2C54040		3275		
39B4	E6C1E240C9D5C3D6	39D5	3276	DC	CL34'WAS INCORRECT, SEE PRINTER LOG OUT'
39B8	D9D9C5C3E36840E2		3276		
39C4	C5C540D7D9C9D5E3		3276		
39CC	C5D940D3D6C740D6		3276		
39D4	E4E3		3276		
39D6	03	39D6	3277	AIDT5E DC	XL1'03' ETX
39D7	4048	39D8	X4048	DC	XL2'4048' CONSTANT 4048
39D9	E7D4C9E361D9C5C3	39E5	3279	XMRCHG DC	CL13'XMIT/REC FLD.'
39E1	40C6D3C448		3279		
39E6	7DC5D5E3C5D94040	39E6	3280	AIDTAB EQU	*
39EE	404040	39F0	3281	DC	CL11''ENTER
39F1	F1D7C660F1404040	39F8	3282	DC	CL11'1PF-1
39F9	404040		3282		
39FC	F2D7C660F2404040	3A06	3283	DC	CL11'2PF-2
3A04	404040		3283		
3A07	F3D7C660F3404040	3A11	3284	DC	CL11'3PF-3
3A0F	404040		3284		
3A12	F4D7C660F4404040	3A1C	3285	DC	CL11'4PF-4
3A1A	404040		3285		
3A1D	F5D7C660F5404040	3A27	3286	DC	CL11'5PF-5
3A25	404040		3286		
3A28	F6D7C660F6404040	3A32	3287	DC	CL11'6PF-6
3A30	404040		3287		
3A33	F7D7C660F7404040	3A3D	3288	DC	CL11'7PF-7
3A3B	404040		3288		
3A3E	F8D7C660F8404040	3A48	3289	DC	CL11'8PF-8
3A46	404040		3289		
3A49	F9D7C660F9404040	3A53	3290	DC	CL11'9PF-9
3A51	404040		3290		
3A54	7AD7C660F1F04040	3A5E	3291	DC	CL11'0PF-10
3A5C	404040		3291		

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3A5F	7BD7C660F1F14040	3A69	3292	DC	CL11'#PF-11
3A67	404040		3292		
3A6A	7CD7C660F1F24040	3A74	3294	DC	CL11'#PF-12
3A72	404040		3294		
3A75	F0E3C5E2E340D9C5	3A7F	3295	DC	CL11'OTEST REQ
3A7D	D84040		3295		
3A80	6CD7C160F1404040	3A8A	3296	DC	CL11'2PA-1
3A88	404040		3296		
3A8B	6ED7C160F24DC3D5	3A95	3297	DC	CL11'>PA-2(CNCL)'
3A93	C3D35D		3297		
3A96	6BD7C160F3404040	3AA0	3298	DC	CL11',PA-3
3A9E	404040		3298		
3AA1	6DC3D3C5C1D94040	3AAB	3299	DC	CL11'_CLEAR
3AA9	404040		3299		
3AAC	7EE2C5D340D7C5D5	3AAC	3300	SKTOSP EQU	*
3AB4	404040	3AB6	3301	DC	CL11'*=SEL PEN
3AB7	E6C3C1D9C440D9C4	3AC1	3302	DC	CL11'WCARD RDR
3ABF	D94040		3302		
3AC2	60D5D640C1C9C440	3ACC	3303	DC	CL11'-NO AID
3ACA	404040		3303		
3ACD	40E4D5D2D5D6E6D5	3AD7	3304	DC	CL11' UNKNOWN
3AD5	404040		3304		
3AD8	0000	3AD9	3305	COUNT DC	XL2'0' DELAY COUNT HOLDER
3ADA	0002	3ADB	3306	TWO DC	IL2'2' CONSTANT TWO
3ADC	0240DDAA	3ADF	3307	AIDEX1 DC	XL4'0240DDAA' DEVICE (DD) AND AID (AA) FILLED IN
3AEO	40401140C1	3AE4	3308	DC	XL5'40401140C1'
3AE5	40C4C5D7D9C5E2E2	3AEC	3309	DC	CL8'DEPRESS'
3AED	03	3AED	3310	AIDEX2 DC	XL1'03' ETX
3AEE	C9D5C3D6D9D9C5C3	3BOE	3311	INCCORP DC	CL33'INCORRECT RESULTS FROM
3AF6	E340D9C5E2E4D3E3		3311		
3AFF	E240C6D9D6D44040		3311		
3B06	4040404040404040		3311		
3B0E	40		3311		
3B0F	0227F540	3B0F	3312	RT&P EQU	*
3B13	5C5C5C5CC4C5E5C9	3B1F	3314	RT6DV DC	XL4'0227F540' ROUTINE 6 WRITE PATTERN
3B18	C3C540E7E7		3314		STX,ESC,ER/WR,WCC
3B20	1D60	3B21	3315	DC	XL2'1D60' SF, PROT
3B22	D7F1	3B23	3316	DC	CL2'P1' SF, UNPROT
3B24	1D40	3B25	3317	DC	XL2'1D40' SF, UNPROT
3B26	E4F1	3B27	3318	DC	CL2'U1' SF, PROT
3B28	1D60	3B29	3319	DC	XL2'1D60' SF, UNPROT
3B2A	D7F2	3B2B	3320	DC	CL2'P2' SF, UNPROT
3B2C	1D40	3B2D	3321	DC	XL2'1D40' SF, UNPROT
3B2E	E4F2	3B2F	3322	DC	CL2'U2' SF, PROT
3B30	1D60	3B31	3323	DC	XL2'1D60' SF, UNPROT
3B32	D7F3	3B33	3324	DC	CL2'P3' SF, UNPROT
3B34	1D40	3B35	3325	DC	XL2'1D40' SF, UNPROT
3B36	E4F3	3B37	3326	DC	CL2'U3' SF, UNPROT
3B38	1D60	3B39	3327	DC	XL2'1D60' SF, UNPROT
3B3A	D7F4	3B3B	3328	DC	CL2'P4' SF, UNPROT
3B3C	1D40	3B3D	3329	DC	XL2'1D40' SF, UNPROT
3B3E	E4F4	3B3F	3330	DC	CL2'U4' SF, UNPROT
3B40	1D60	3B41	3331	DC	XL2'1D60' SF, UNPROT
3B42	D7F5	3B43	3332	DC	CL2'P5' SF, UNPROT
3B44	1D40	3B45	3333	DC	XL2'1D40' SF, UNPROT
3B46	E4F5	3B47	3334	DC	CL2'U5' SF, UNPROT
3B48	1D60	3B49	3335	DC	XL2'1D60' SF, UNPROT
3B4A	D7F6	3B4B	3336	DC	CL2'P6' SF, UNPROT
3B4C	1D40	3B4D	3337	DC	XL2'1D40' SF, UNPROT
3B4E	E4F6	3B4F	3338	DC	CL2'U6' SF, UNPROT
3B50	1D60	3B51	3339	DC	XL2'1D60' SF, UNPROT
3B52	D7F7	3B53	3340	DC	CL2'P7' SF, UNPROT
3B54	1D40	3B55	3341	DC	XL2'1D40' SF, UNPROT
3B56	E4F7	3B57	3342	DC	CL2'U7' SF, UNPROT
3B58	1D60	3B59	3343	DC	XL2'1D60' SF, UNPROT

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
385A	D7F8	385B	3344	DC	CL2'P8'
385C	1D40	385D	3345	DC	XL2'1D40'
385E	E4F8	385F	3346	DC	CL2'U8'
3860	0005	3861	3347	DC	XL2'05'
3862	03	3862	3348	RT6PE DC	XL1'03'
			3349		
		3863	3350	RT6T EQU	*
3863	0227F140	3866	3351	DC	XL4'0227F140'
3867	05	3867	3352	DC	XL1'05'
3868	1305	3869	3353	DC	XL2'1305'
386A	3C40D8D9	386D	3354	DC	XL4'3C40D8D9'
386E	05	386E	3355	DC	XL1'05'
386F	1140E3	3871	3356	DC	XL3'1140E3'
3872	0505	3873	3357	DC	XL2'0505'
3874	D4	3874	3358	DC	CL1'H'
3875	05	3875	3359	DC	XL1'05'
3876	12407C	3878	3360	DC	XL3'12407C'
3879	C5	3879	3361	DC	CL1'E'
387A	1240C3	387C	3362	DC	XL3'1240C3'
387D	11407D	387F	3363	DC	XL3'11407D'
3880	3C40C260	3883	3364	DC	XL4'3C40C260'
3884	114040	3886	3365	DC	XL3'114040'
3887	03	3887	3366	RT6TE DC	XL1'03'
			3367		
		3888	3368	R6EXP EQU	*
3888	6060	3889	3369	DC	CL2'---
388A	00	388A	3370	DC	XL1'0'
388B	5CC4C5E5C9C3C540	3894	3371	R6EDV DC	CL10'*DEVICE XX'
3893	E7E7		3371		
3895	1D60	3896	3372	DC	XL2'1D60'
3897	D7F1	3898	3373	DC	CL2'P1'
3899	1D40	389A	3374	DC	XL2'1D40'
389B	E4F1	389C	3375	DC	CL2'U1'
389D	1D60	389E	3376	DC	XL2'1D60'
389F	D7F2	38A0	3377	DC	CL2'P2'
38A1	1D40	38A2	3378	DC	XL2'1D40'
38A3	D9F2	38A4	3379	DC	CL2'R2'
38A5	1D60	38A6	3380	DC	XL2'1D60'
38A7	D7F3	38A8	3381	DC	CL2'P3'
38A9	1D40	38AA	3382	DC	XL2'1D40'
38AB	E4F3	38AC	3383	DC	CL2'U3'
38AD	1D60	38AE	3384	DC	XL2'1D60'
38AF	D7F4	38B0	3385	DC	CL2'P4'
38B1	1D40	38B2	3386	DC	XL2'1D40'
38B3	E4F4	38B4	3387	DC	CL2'U4'
38B5	1D60	38B6	3388	DC	XL2'1D60'
38B7	D7F5	38B8	3389	DC	CL2'P5'
38B9	1D40	38BA	3390	DC	XL2'1D40'
38BB	E4F5	38BC	3391	DC	CL2'U5'
38BD	1D60	38BE	3392	DC	XL2'1D60'
38BF	D7F6	38C0	3393	DC	CL2'P6'
38C1	1D40	38C2	3394	DC	XL2'1D40'
38C3	D4	38C3	3395	DC	CL1'H'
38C4	001D60	38C6	3396	DC	XL3'001D60'
38C7	D7F7	38C8	3397	DC	CL2'P7'
38C9	1D4000001D60	38CE	3398	DC	XL6'1D4000001D60'
38CF	D7F8	38D0	3399	DC	CL2'P8'
38D1	1D4000	38D3	3400	DC	XL3'1D4000'
38D4	C56060	38D6	3401	DC	CL3'E---
38D7	FE	38D7	3402	DC	XL1'FE'
		38D8	3403	R6EXP2 EQU	*
38D8	0000000000000000	38E4	3404	DC	13XL1'00'
38E0	0000000000		3404		
38E5	1D60	38E6	3405	DC	XL2'1D60'
38E7	D7F1	38E8	3406	DC	CL2'P1'
38E9	1D400000	38EC	3407	DC	XL4'1D400000'
38ED	1D60	38EE	3408	DC	XL2'1D60'
38EF	D7F2	38F0	3409	DC	CL2'P2'

SF, UNPROT

PT, SHOULD GO TO ADDR 0  
ETX

ROUTINE 6 TEST SEQUENCE  
STX,ESC,WRITE,WCC  
PT (PROGRAM TAB)  
INSERT CURSOR AND PT  
RA AND INSERT AN 'R'  
PT  
SBA  
PT TWICE  
INSERT AN 'H'  
PT  
ERASE UNPROT TO ADDR  
INSERT AN 'E'  
EUA TO ADDR 4  
SBA  
REPEAT A '-' TO ADDR 3  
RESET BUFFER ADDRESS  
ETX

EXPECTED RESULT FOR RTN 6

SWITCH TO SINGLE CHARACTER '-'

8943 DA FUNCTIONAL TESTS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
38F1	1D400000	38F4	3410	DC	XL4'1D400000'
38F5	1D60	38F6	3411	DC	XL2'1D60'
38F7	D7F3	38F8	3412	DC	CL2'P3'
38F9	1D400000	38FC	3413	DC	XL4'1D400000'
38FD	1D60	38FE	3414	DC	XL2'1D60'
38FF	D7F4	3C00	3415	DC	CL2'P4'
3C01	1D400000	3C04	3416	DC	XL4'1D400000'
3C05	1D60	3C06	3417	DC	XL2'1D60'
3C07	D7F5	3C08	3418	DC	CL2'P5'
3C09	1D400000	3C0C	3419	DC	XL4'1D400000'
3C0D	1D60	3C0E	3420	DC	XL2'1D60'
3C0F	D7F6	3C10	3421	DC	CL2'P6'
3C11	1D400000	3C14	3422	DC	XL4'1D400000'
3C15	1D60	3C16	3423	DC	XL2'1D60'
3C17	D7F7	3C18	3424	DC	CL2'P7'
3C19	1D400000	3C1C	3425	DC	XL4'1D400000'
3C1D	1D60	3C1E	3426	DC	XL2'1D60'
3C1F	D7F8	3C20	3427	DC	CL2'P8'
3C21	1D40	3C22	3428	DC	XL2'1D40'
3C23	FE	3C23	3429	DC	XL1'FE'
		3C24	3430	RT7P EQU	*
3C24	0227F540	3C27	3431	DC	XL4'0227F540'
3C28	110000	3C2A	3432	INVADR DC	XL3'110000'
3C2B	03	3C2B	3433	RT7PE DC	XL1'03'
3C2C	C760	3C2D	3434	INVM1 DC	XL2'C760'
3C2E	5E40	3C2F	3435	INVM2 DC	XL2'5E40'
3C30	40C1	3C31	3436	DC	XL2'40C1'
3C32	0000	3C33	3437	SNSARE DC	XL2'0'
3C34	01FE	3C35	3438	X01FE DC	XL2'01FE'
3C36	1604	3C37	3439	SSN6 DC	XL2'1604'
3C38	0000	3C39	3440	BDGRTN DC	XL2'0'
3C3A	00	3C3A	3441	STFLG DC	XL1'0'
		3C3B	3442	R8P1 EQU	*
3C3B	0227F5C2	3C3E	3443	DC	XL4'0227F5C2'
3C3F	003C4040F1	3C43	3444	DC	XL5'003C4040F1'
3C44	03	3C44	3445	R8P1E DC	XL1'03'
		3C45	3446	R8P2 EQU	*
3C45	0227F5C2	3C48	3447	DC	XL4'0227F5C2'
3C49	F3	3C49	3448	DC	CL1'3'
3C4A	1DFE	3C4B	3449	DC	XL2'1DFE'
3C4C	3C4040F2	3C4F	3450	DC	XL4'3C4040F2'
3C50	03	3C50	3451	R8P2E DC	XL1'03'
		3C51	3452	R8P3 EQU	*
3C51	0227F5C2	3C54	3453	DC	XL4'0227F5C2'
3C55	F1	3C55	3454	DC	CL1'1'
3C56	3C4040F4	3C59	3455	DC	XL4'3C4040F4'
3C5A	03	3C5A	3456	R8P3E DC	XL1'03'
		3C5B	3457	R8P4 EQU	*
3C5B	0227F5C2	3C5E	3458	DC	XL4'0227F5C2'
3C5F	3C404000	3C62	3459	R8CHR DC	XL4'3C404000'
3C63	03	3C63	3460	R8P4E DC	XL1'03'
3C64	016CD9024000	3C69	3461	R8EXP1 DC	XL6'016CD9024000'
3C6A	C4C403	3C6C	3462	R8EXP2 DC	XL3'C4C403'
3C6D	3C37	3C6E	3463	ASSN6 DC	AL2(SSN6)
3C6F	3C39	3C70	3464	ABDGRT DC	AL2(BDGRTN)
		3C71	3465	R11P1 EQU	*
3C71	0227F5C2	3C74	3466	DC	XL4'0227F5C2'
3C75	1D60	3C76	3467	DC	XL2'1D60'
3C77	C9D540D3D6E6C5D9	3C9D	3468	DC	CL39'IN LOWER CASE (ALPHA IF DATA ENTRY KDB)'
3C7F	40C3C1E2C5404DC1		3468		
3C87	D3D7C8C140C9C640		3468		
3C8F	C4C1E3C140C5D5E3		3468		
3C97	D9E840D2C4C25D		3468		
3C9E	40C3D6D7E840E3C8	3C80	3469	DC	CL19' COPY THE FOLLOWING'
3CA6	C540C6D6D3D3D6E6		3469		
3CAE	C9D5C7		3469		
3CB1	11C17E1DE8	3CB5	3470	DC	XL5'11C17E1DE8'
3CB6	98A68599A3A8A489	3CCF	3471	LCP DC	XL26'98A68599A3A8A489969781A284868788919293A9A783A5829594'

END OF PATTERN  
PATTERN TO TRY INVALID ADDRESS  
STX,ESC,ER/WRT,WCC  
INVALID SBA GETS FILLED IN  
ETX  
INVALID MODEL 1 ADDRESS  
INVALID MODEL 2 ADDRESS  
OPERATION CHECK STATUS  
SENSE AREA  
HEX 01FE  
MICRO WORD TO SET SSN6(BLOCK PARITY)  
MICRO WORD TO RETURN TO WRITE LOOP  
FLAG TO INDICATE MICRO CODE CHANGED  
ERASE WRITE TO CAUSE PARITY CHECK  
STX,ESC,ER/WR,UNLOCK  
RA 0000 CHAR 1  
ETX  
ERASE WRITE TO CAUSE PARITY CHECK  
STX,ESC,ER/WR,UNLOCK  
CHARACTER 3  
BAD PARITY ATTRIBUTE GETS PUT IN  
RA 0000 CHAR 2  
ETX  
ERASE WRITE TO CAUSE BAD PARITY  
STX,ESC,ER/WR,UNLOCK  
BAD PARITY GETS PUT IN  
RA 000 CHAR 4  
ETX  
SENDS ALL ONE CHARACTER  
STX,ESC,ER/WR,UNLOCK  
RA, CHAR GETS FILLED IN  
ETX  
DEVICE GETS FILLED IN  
EXPECTED STATUS = DC US

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3CBE	969781A284868788		3471		
3CC6	919293A9A783A582		3471		
3CCE	9594		3471		
3CDD	11C34E1D4013	3C05	3472	DC	XL6*11C34E1D4013*
3CD6	11C3E91D60	3CDA	3473	DC	XL5*11C3E91D60*
3CDB	11C5C1	3CDD	3474	DC	XL3*11C5C1*
3CDE	C9C640E8D6E440C8	3D04	3475	DC	CL39*IF YOU HAVE A DATA ENTRY KBD, (NUMERIC)*
3CE6	C1E5C540C140C4C1		3475		
3CEE	E3C140C5D5E3D9E8		3475		
3CF6	40D2C2C468404D05		3475		
3CFE	E4D4C5D9C9C3E2		3475		
3D05	40C1D9C540E4D7D7	3D2C	3476	DC	CL40* ARE UPPER CASE ALPHA) DEPRESS TEST REQ.*
3D0D	C5D940C3C1E2C540		3476		
3D15	C1D3D7C8C15D40C4		3476		
3D1D	C5D7D9C5E2E240E3		3476		
3D25	C5E2E340D9C5D84B		3476		
3D2D	40D6E3C8C5D9E6C9	3D46	3477	DC	CL26* OTHERWISE, DEPRESS ENTER.*
3D35	E2C56B40C4C5D7D9		3477		
3D3D	C5E2E240C5D5E3C5		3477		
3D45	D948		3477		
3D47	03	3D47	3478	R11P1E DC	XL1*03*
		3D48	3479	R11P2 EQU	*
3D4B	0227F5C2	3D4B	3480	DC	XL4*0227F5C2*
3D4C	1D60	3D4D	3481	DC	XL2*1D60*
3D4E	C9D540E4D7D7C5D9	3D6E	3482	DC	CL33*IN UPPER CASE, COPY THE FOLLOWING*
3D56	40C3C1E2C56B40C3		3482		
3D5E	D6D7E840E3C8C540		3482		
3D66	C6D6D3D3D6E6C9D5		3482		
3D6E	C7		3482		
3D6F	11C17E1DE8	3D73	3483	DC	XL5*11C17E1DE8*
3D74	D8E6C5D9E3E8E4C9	3D8D	3484	UCP DC	CL26*QWERTYUIOPASDFGHJKLZXCVBNM*
3D7C	D6D7C1E2C4C6C7C8		3484		
3D84	D1D2D3E9E7C3E5C2		3484		
3D8C	D5D4		3484		
3D8E	11C34E1D4013	3D93	3485	DC	XL6*11C34E1D4013*
3D94	11C3E91D60	3D98	3486	DC	XL5*11C3E91D60*
3D99	11C5C1	3D9B	3487	DC	XL3*11C5C1*
3D9C	E3C8C5D56B40C4C5	3DAE	3488	DC	CL19*THEN, DEPRESS ENTER*
3DA4	D7D9C5E2E240C5D5		3488		
3DAC	E3C5D9		3488		
3DAF	03	3DAF	3489	R11P2E DC	XL1*03*
		3D80	3490	R11P3 EQU	*
3DB0	0227F5C2	3DB3	3491	DC	XL4*0227F5C2*
3DB4	1D60	3DB5	3492	DC	XL2*1D60*
3DB6	C5C9D9D6D9E240E6	3DE8	3493	DC	CL51*ERRORS WERE DETECTED AND LOGGED OUT ON THE PRINTER.*
3DBE	C5D9C540C4C5E3C5		3493		
3DC6	C3E3C5C440C1D5C4		3493		
3DCE	40D3D6C7C7C5C440		3493		
3DD6	D6E4E340D6D540E3		3493		
3DDE	C8C540D7D9C9D5E3		3493		
3DE6	C5D4B		3493		
3DE9	11C2601DE8	3DED	3494	DC	XL5*11C2601DE8*
3DEE	C4C5D7D9C5E2E240	3E03	3495	DC	CL22*DEPRESS ENTER TO RETRY*
3DF6	C5D5E3C5D940E3D6		3495		
3DFE	40D9C5E3D9E8		3495		
3E04	11C3F1	3E06	3496	DC	XL3*11C3F1*
3E07	C4C5D7D9C5E2E240	3E2D	3497	DC	CL39*DEPRESS PA-2(CNCL) TO GO ON. -CAUTION-
3E0F	D7C16D F24DC3D5C3		3497		
3E17	D35D40E3D640C7D6		3497		
3E1F	40D6D54B404060C3		3497		
3E27	C1E4E3C9D6D560		3497		
3E2E	40D9C5D8E4C9D9C5	3E52	3498	DC	CL37* REQUIRES LOWER SHIFT ON SOME KEYBDS.*
3E36	E240D3D6E6C5D940		3498		
3E3E	E2C8C9C6E340D6D5		3498		
3E46	40E2D6D4C540D2C5		3498		
3E4E	E8C2C4E248		3498		
3E53	03	3E53	3499	R11P3E DC	XL1*03*
		3E54	3500	R12P EQU	*

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3E54	0227F57F	3E57	3501	DC	XL4*0227F57F*
3E58	C5D5C440D6C640E3	3E70	3502	EJMG DC	CL25*END OF TEST FOR DEVICE XX*
3E60	C5E2E340C6D6D940		3502		
3E68	C4C5E5C9C3C540E7		3502		
3E70	E7		3502		
3E71	03	3E71	3503	R12PE DC	XL1*03*
3E72	E6D9D6D5C740C4C1	3E92	3504	R11MG DC	CL33*WRONG DATA RECEIVED FROM KEYBOARD*
3E7A	E3C140D9C5C3C5C9		3504		
3E82	E5C5C440C6D9D6D4		3504		
3E8A	40D2C5E8C2D6C1D9		3504		
3E92	C4		3504		
3E93	0240DDAA	3E96	3505	R11EX1 DC	XL4*0240DDAA*
3E97	C36A11C34F	3E9B	3506	R11EX2 DC	XL5*C36A11C34F*
		3E9C	3507	R09P EQU	*
3E9C	0227F56A	3E9F	3508	DC	XL4*0227F56A*
		3EAO	3509	R09PS EQU	*
3EA0	E4D7D7C5D940C3C1	3EAA	3510	DC	CL11*UPPER CASE-
3EAB	E2C560		3510		
3EAB	C1C2C3C4C5C6C7C8	3EC4	3511	DC	CL26*ABCOEFGHIJKLMNOPQRSTUVWXYZ* UPPER CASE PATTERN
3EB3	C9D1D2D3D4D5D6D7		3511		
3EBB	D8D9E2E3E4E5E6E7		3511		
3EC3	E8E9		3511		
3EC5	40404040D3D6E6C5	3E03	3512	DC	CL15* LOWER CASE-
3ECD	D940C3C1E2C560		3512		
3ED4	8182838485868788	3EE0	3513	DC	XL13*81828384858687888991929394* LOWER CASE PATTERN
3EDC	8991929394		3513		
3EE1	9596979899A2A3A4	3EED	3514	R09EXP DC	XL13*9596979899A2A3A4A5A6A7A8A9*
3EE9	A5A6A7A8A9		3514		
3EEE	00	3EEE	3515	R09PE DC	XL1*0*
		3EEF	3516	AIDT6 EQU	*
3EEF	0227F5C2	3EF2	3517	DC	XL4*0227F5C2*
3EF3	1D60	3EF4	3518	DC	XL2*1D60*
3EFJ	E4E2C9D5C740E3C8	3F1B	3519	DC	CL39*USING THE SELECTOR PEN, SELECT - FLD A *
3EFD	C540E2C5D3C5C3E3		3519		
3F05	D6D940D7C5D56B40		3519		
3F0D	E2C5D3C5C3E34060		3519		
3F15	40C6D3C440C140		3519		
3F1C	5040C6D3C440C34B	3F43	3520	DC	CL40*% FLD C. THEN SELECT **END**. IT SHOULD *
3F24	4040E3C8C5D540E2		3520		
3F2C	C5D3C5C3E3407D05		3520		
3F34	D5C47D4B4040C9E3		3520		
3F3C	40E2C8D6E4D3C440		3520		
3F44	C2C540C4C5E3C5C3	3F6B	3521	DC	CL40*BE DETECTED. IF FEATURE NOT INSTALLED, *
3F4C	E3C5C44B4040C9C6		3521		
3F54	40C6C5C1E3E4D9C5		3521		
3F5C	40D5D6E340C9D5E2		3521		
3F64	E3C1D3D3C5C46B40		3521		
3F6C	C4C5D7D9C5E2E240	3F7E	3522	DC	CL19*DEPRESS PA-2(CNCL)*
3F74	D7C160F24DC3D5C3		3522		
3F7C	D35D4B		3522		
3F7F	11C25F	3F81	3523	DC	XL3*11C25F*
3F82	1DE8	3F83	3524	DC	XL2*1DE8*
3F84	11C3F0	3F86	3525	DC	XL3*11C3F0*
3F87	1DE8	3F88	3526	DC	XL2*1DE8*
3F89	6FC6D3C440C14040	3F91	3527	DC	CL9*?FLD A *
3F91	40		3527		
3F92	1DE8	3F93	3528	DC	XL2*1DE8*
3F94	6FC6D3C440C24040	3F9C	3529	DC	CL9*?FLD B *
3F9C	40		3529		
3F9D	1DE8	3F9E	3530	DC	XL2*1DE8*
3F9F	6FC6D3C440C34040	3FA7	3531	DC	CL9*?FLD C *
3FA7	40		3531		
3FA8	1DE8	3FA9	3532	DC	XL2*1DE8*
3FAA	6FC6D3C440C44040	3FB2	3533	DC	CL9*?FLD D *
3FB2	40		3533		
3FB3	1DE8	3FB4	3534	DC	XL2*1DE8*
3FB5	40C5D5C440404040	3FB8	3535	DC	CL9* END *
3FB8	40		3535		



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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
3FBF	1DE8	3FBF	3536	DC	XL2'1DE8'
3FC0	03	3FC0	3537	DC	XL1'03'
		3FC1	3538	EQU	*
3FC1	0227F1C2	3FC4	3539	DC	XL4'0227F1C2'
3FC5	11C6F8	3FC7	3540	DC	XL3'11C6F8'
3FC8	E3D9E840C1C7C1C9	3FEF	3541	DC	CL40'TRY AGAIN OR DEPRESS PA-2(CNCL) TO GO ON'
3FD0	D540D6D940C4C5D7		3541		
3FD8	D9C5E2E240D7C160		3541		
3FE0	F24DC3D5C3D35D40		3541		
3FE8	E3D640C7D640D6D5		3541		
3FF0	03	3FF0	3542	DC	XL1'03'
3FF1	11C3F111C4C511C4	3FFA	3543	DC	XL10'11C3F111C4C511C4D903'
3FF9	D903		3543		
3FFB	00	3FFB	3544	DC	XL1'0'
		3FFC	3545	EQU	*
3FFC	37FF323240408F8F	4003	3546	DC	XL8'37FF323240408F8F'
4004	000000	4006	3547	DC	XL3'0'
4007	2D	4007	3548	DC	XL1'2D'
		4008	3549	EQU	*
4008	3DFF	4009	3550	DC	XL2'3DFF'
			3551		
400A	02276F03	400A	3552	EQU	*
400E	0227F140110000	4014	3553	DC	XL4'02276F03'
4015	13	4014	3554	DC	XL7'0227F140110000'
4016		4015	3555	DC	XL1'13'
412F	0000	412E	3556	DS	281CL1
4131	4138	4130	3557	DC	XL2'00'
4133	0000	4132	3558	DC	AL2(EXRIP)
4135	413A	4134	3559	DC	XL2'00'
4137	4176	4136	3560	DC	AL2(EXRIP-1)
4139	01E0	4138	3561	DC	AL2(EXRIPE)
		413A	3562	DC	XL2'01E0'
		413B	3563	EQU	*
413B	C1C2C3C4C5C6C7C8	415E	3564	DC	CL36'ABCDEFHGHIJKLMNOPQRSTUVWXYZ0123456789'
4143	C9D1D2D3D4D5D6D7		3564		
4148	D8D9E2E3E4E5E6E7		3564		
4153	E8E9F0F1F2F3F4F5		3564		
4158	F6F7F8F9		3564		
415F	5060617A4858687B	4176	3565	DC	CL24'&-/:.\$.#<@{}+;>= -?*" ' .
4167	4C6C7C4D5D4E5E6E		3565		
4177	FF	4177	3566	DC	XL1'FF'
4178	0780	4179	3567	DC	XL2'0780'
417A	0000	417B	3568	DC	XL2'0'
417C	01E8	417D	3569	DC	IL2'488'
417E	0788	417F	3570	DC	IL2'1928'
4180	E0AA	4181	3571	DC	XL2'E0AA'
4182	8A9A	4183	3572	DC	XL2'8A9A'
			3573		
4200			3574	ORG	*,256,0
		4200	3575	EQU	*
4200		431F	3576	DS	288CL1
4320	FF	4320	3577	DC	XL1'FF'
4321		49FF	3578	DS	1739CL1
			3579	TREP	
			3580	TREP	
			3581	TREP	
			3582	TREP	
			3583	TREP	
			3584	TREP	
			3585	TREP	
			3586	TREP	
			3587	TREP	
			3588	TREP	
			3589	TREP	
			3590	TREP	
			3591	TREP	
			3592	TREP	

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ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			3593		TREP
			3594		TREP
			3595		TREP
			3596		TREP
			3597		TREP
			3598		TREP
			3599		TREP
			3600		TREP
			3601		TREP
			3602		TREP
			3603		TREP
			3604		TREP
			3605		TREP
			3606		TREP
			3607		TREP
			3608		TREP
0A11	3609				END START

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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Lists various symbols and their cross-references.

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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Lists various symbols and their cross-references.

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CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains cross-reference data for various functional tests like STATMS, STATR, STATRC, etc.

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EC NO. 825023 825032 825034 825035

CROSS-REFERENCE

Table with columns: SYMBOL, T, LEN, VALUE, DEFN, REFERENCES. Contains cross-reference data for various functional tests like TSTAID, TSTAT, TSTATT, etc.

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CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
XMTR	C	001	008A	0031	1626
XMTRC	A	001	4200	3575	0692 0709 0785 0785 0796 0816* 0817* 0818 0818* 0819* 0820* 0826 0827 0999* 1000* 1122 1135 1166 1267 1288 1372 1391* 1394 1404* 1407* 1409 1415* 1419 1420 1425 1606 1614 1614* 1689 1934* 1990 1992 1997 1999 2032 2110 2180 2219 2219 2220 2220 2510 2659 3219 3220 2020 2346
XMRMG	A	013	39E5	3279	0167 0168* 0169 0169 0170 0173 0173 0174 0175 0175 0176 0180 0181 0181 0182 0182 0183 0183 0184 0186 0187 0187 0189 0191 0242* 0245 0245* 0248 0248* 0250 0362 0364 0366 0629 0670 0838 0843 1084 1087 1088* 1088 1091 1091* 1092 1094 1394* 1396 1397 1397* 1458* 1459 1461 1463 1465 1467 1469 1471 1471* 1509* 1510 1511 1594* 1603 1605 1608 1610 1611 1612 1633* 1672 1686 1689* 1692 1693 1693* 1695 1699* 1725 1729 1731 1734 1738 1752 1754 1756 1794 1801* 1804 1825* 1854 1856* 1857 1858 1881* 1884* 1888* 1892* 1896* 1898* 1901* 1904 1905 1934* 1936 1938 1940 1940* 1965* 1971* 1974 1976 1978* 1979 1980 1981 1981* 1984* 1986 2031* 2034 2067 2067* 2078 2082* 2084 2086 2089 2091 2094 2094* 2097* 2112 2116 2119 2141 2143 2215 2216* 2217 2223* 2379 2425 2439*
XR1	C	001	0001	0017	0319 1054* 1055 1057 1066* 1067 1070 1076* 1084 1111* 1126 1137 1149* 1161 1161* 1162 1170 1172 1175 1176 1178 1180 1181 1200 1483* 1497 1497* 1498 1519 1521 1593 1606* 1615 1640* 1687 1688* 1692 1694 1694* 1698 1700* 1795 1802* 1806 1810 1810* 1826* 1855 1879* 1883* 1887* 1891* 1895* 1899* 1903* 1919* 1935* 1941 1941* 1944 1945 1945* 1946 1948 1966* 1972 1980 1982 1982* 2032* 2035 2068 2068* 2079 2083* 2084 2087 2090 2095 2095* 2098* 2426 2440*
XR2	C	001	0002	0018	1598 1599 1600 1601
XXXX	A	004	2657	2541	
X01FE	A	002	3C35	3438	1572
X1	A	004	2537	2439	2425*
X2	A	004	253B	2440	2426*
X404B	A	002	39D8	3278	0544
X7200	A	002	2663	2549	0148
ZERO	A	003	262C	2522	2428
TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0					

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8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

GBK GBD PN 42 34258 EC 825035 894 DA FUNCTIONAL TESTS

T+-Y:SMC B-7 "8V6 D C.M' BQ +@-DD+D BB!HEA3/ "-,2U -@\*3BR| WFL4 <IX2-@-@ BQ ZI "K89430001

T+-Z5<IU' BQZ@YD LIC WC% ACHDB- H H@/ DOH\*GT-AB-3 U ZIC D>UFAC D >5DFCC AA\*4FA@5S @5- ;RY89430002

T+-DOOCAQ.U( K" 9IWI "&Z\_I HMDT3 9I/DOOB\*9ON4<,&B AI/HW.\*-BY7/IX 9OH\*BF-DSI, @ KQ GC D EQ 89430003

T+--,,I-MWP30 I-@ < JV-I-XB &,CPO( \$070\*DO@CI-@WCL3 -I-Z\* KI)- -P -G708G3- C2U H ; 2Q NEM89430004

T+-WNCN\_ 5,\$P-( \$058CO5\_88ETZDBE @ /'; K -OB . 7S H<B&B\_+ KHM.\*B GB\_@ "" "" B-@B- H HOI "" 4C-89430005

T+-/\_B"\$ /OHE MB 0J@BG /YFHTA' | "" WHE@CI-4WCL30B@3 /OHSS- O "B@+I@ 7" H@XTU-."08@B @@Z "" 5-489430006

T+->\* /O "U? "C? 0."U@ K" @! \*."Y3W |."32D@ZB-B"@|EU ?-~HEA?HQI@HGB?H DOTU!."32ZE@#=B" 9+E8 LLY89430007

T+-?P."32DD- " B" 9@YD&CO .Y2QC- ?=B"8OH\*.Y%HAI-Y 8DB"@@Z C4-DB+ - ?@|HE "HA @O B"- ?=GY 18E89430008

T+-OK "" B &\_<OA .E331B43 /O\_GOM\* 3F-QE<I- /O\_GOM\* ROL4 I-"2 J7 /10 9+A HOIH@--OAHO@ V3@ "" J@-89430009

T+-I(/OHE /<,F#B GB"Q< KQEIV@@ KQ GC DRQBQI| "" WC34 ISUA@2QZ@-D7OH\* BFUED.EDI"@@B@ /Y AMBO E.<89430010

T+-2HD@BG /YAJ23 1OH\*BF-R|."H 8@ "H H@Z DOH\*BE@B@ SH I"3? "-, /1VR| "" HCT4 I-" -&HOOH\* BF/Q O#U89430011

T+-3COH\*BH- 9DSR \$0A <C.% <BGGK- /O76OH\*BF-DOIZ\$ /O14| @HH@BGH@ B "" 5\_OH\*BF-DZI"> "" /1U JH89430012

T+-3==LO ."7 /12 EC D\_\$SPI|F OH O A(=#V3331("E<AT- @+ , /1D@ AACG25 2LEDAIT\*2-LJi &D W+~H JK 89430013

T+-49-NI( @DW| "H ACC1 IS, /2HXOH\* \*6@BGG\*H<DB@C.PH < K6EIT@@DBQDOH\* SZ@BGG@> @D " S" @@YD 2C@89430014

T+-548CD ."4@@T- 4OH\*BF-<7("O@\*2R -OH\*BEZT ."4<AT- @+ <@>CBQOH\*/P@B GGI, /O@\_ O +E\*B G /Y 4L<89430015

T+-6? JUXB<BGF-X /12EC DO@2PICC@ O@2#D|O OX135<IO <DK:D<H@@QK"#| D ?"<BGF, & NU<-<IC /2D 18 89430016

T+-7DGC50."@@QK" @@YDD|G ?=331<IO \*@CB|@-01+H ?"~H @BT4E."32-@.2/1Q "E2"@@-D||<HOXL- A "-0 =I489430017

T+-8VA/ DIGYOXB ."OH."\*8GCE<8@B" @Z GOH\*W7HG <B GG\$ \_&DC /OHDA "" +/%B@ /YAGS\*W+ @ BBT0 " ,D89430018

T+-9-PC-K@Z -OH\* BF-EBH\$# /OHEAT D"MBG SHI@3 "" .O < C-K."@3 /1X9OH\* \*WT1H+ 88 @K@Z D|D "" JD89430019

T+-:s+ @ /1D4 " 1 CG3-POH\*/F@BGGIY < C-Q+A. /16@H<I -OH\*BE-H C?. /OH E JX@&8GF-X /12 EC D R,@89430020

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OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+80B-V328GF, &	.D<-+D\$ /2DQOH*	*W8BGF, & 4<-I~*	/1*NC<_1SP*C<	_ :S:QC _ :TBQC	_ ;KQ M0889430021
T+2AJCOA-POHME0	P.R&8E-0A.P296C0	C.RP /1=10H*\$1XB	G /OF *UOH*BF-D	VI6\$ /1X90H**W-0	A+12 \$2M89430022
T+<I*2<L>MI**	/1D4 EICG3_SOM*	/F<BGF, & ID<-+B*	*B*#0H*/G<BGG&X	66IG /12ECH*E_	CC12 OB 89430023
T+>G& 7 /2DQOH*	S+AUOH*)>OJ &CB	G /QG **<OH*BF-D	-18\$ /1X90H**W-0	A1BY2.LS .72U Q	< LO R/M89430024
T+>BHT0?OH*E_	G&122H44A K072-D	.OH**+L-EIVT UA4	HC&DNO3012-DH0H*	\$1286 /Q2EKQDC D	?=LO - M89430025
T+>B<BGHD*2D2Q	DOH*S20- DH /OH	E J2XZ*BGF-U2DL1	SC MI-185OH*E&B	GGI, /1D4	L&D :E*89430026
T+ / 8 KQ72-E30H*	S+ ROH**+L-EIVT	ZUFYI KR&IUX2-E8	< K*9IUUB&EKQDOH*	S28BGFV. /12E0H*	E_ 9&889430027
T+ /A3BD<-IF /2D	QOH*E_ & -DWIT7	AIF.2 &22OT1SC M	I-18YOH* :T7BIF.	&HDI<<2Q-OEC*Z	6,3 &J489430028
T+ /B>/O*DI&GWH&B	GHD~ /1*NC - :4H	HC &EKQEC - /C1	XIA WH&BGHD* BMK	-1D& B4<-IE BMK	-IEY *EM89430029
T+ /CZBE J2<BG /Y	A(S->OH*R=LOC >#	/12E0H*E_ AK&12	#3BGHJT /12E  B	=#3BGG&X&D 22C*	#C D 9A-89430030
T+ /DUE QWAL3*E L	/1D4 _CG4 G	**28GHXHC:C4 I/C	2 &-2ESQDOH*S2**	HA-7*E-AB C4 I/C	2-J 6R&89430031
T+ /E-OH*BFYH3H/X	J2QDOH*S204A&-4	H(*HAE O..P9 A00	A.Q W(30&IS, /2H	XI&2**=HAEYO  *Z	2 H 2Z&89430032
T+ /FE&CBGF, & B4<	-& - /1D525S 25T	-C 1BA4 CC ACASQ	EC15CAMCF185CA30	A&-Y3S< 2C3*#0H*	E_ D *E489430033
T+ /GNA4<I&O*( KQ	-1SL2-&-2E2QDOH*	S28BGF, & M<-& V	( -MHL HABCQOIS,	/2HXG DWD0*( KR	\$1UK 6-889430034
T+ /H&OHDBE-0A.*U	W&28G /DBH2ZF AM	WH&BGHD*H-AH9+H	BC< & /\$ /2LD0H*	BF-DSI*7 /1X9C<	2ULD RT&89430035
T+ /I.,T/ .72D Y	<AKGHDT. /2F*C M	/2/H8OH*/7&B&12	1X-CS&122V&> DY<	8&B*0A BETS -3	UB& H& 89430036
T+ /HF:TS -09& H	<0A BET3BH<2&K-	MOH*BF-DPHAL /1X	9C<3:CF>C M/2/H	BOH*/?&CV&123;02	D0D 4:089430037
T+ /A+D ?* & /Q	202-C HVE<BGF-U	< 3&E<E8< 3L2<E8	B-B**2/ )+H BC<B	EI+Y8- HK+K BC<	6 /Q 9D&89430038
T+ />C M/2/ :2Y*	:C M/2/<   <YECS	-3 UBLD+H BCCU	6 -3 D HOOH*BF-D	PHAL /2F* HECG3&	) (* 7QUB9430039
T+ /<7&124* &6 D4X	B&B**0I BETS -3	UBLD+H BCCUH -3	D HOI<&Y 334HAL	/OHE J*YE<BGF-U	< 3M \$I089430040
T+ /12,3F>C M/2/I	H0H*/?&B&125&-:	D948- HKOI U:TS	-09A HCOA BET3	EH<2*K-R0H*BF-D	PHAL :1Q89430041
T+ />_OH*R=*BGGIY	< 3&G<E8<AKGH090	<*MI1(S&<DM&S(29	/2GA J.CG3&+C8	L93/ .7 U HO+H	BC<< RIU89430042

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+ /YUBLD+H BCCU	B -3 D HOI<&Y 33	6MAL /OHE J*YE<B	GF-UK 3;2<E8<AKG	HD=& /2F*  ACG3;	"DH 7Y089430043
T+ /TESUB&B**0A	BET-H -, D HOOH*	U:3BGF-X /OHE J2	YK3-& -.2UA-B TD	X( H9A O +_8WAKO	+_2 EED89430044
T+ /J: <BGE-X /12	E0H*E_ B#&129 2B	GHJTB TXM( H9A<B	GG*M< C; :I-M& C,	- OJ.Q4: #LO .*T	/10 5#*89430045
T+ /KR+EOH.P2V=3M	B+&&8DBRQ0A N T-	-IVT DAPD+D W0<B	EEEL_ < OHONHAO	. *UCO-D99/4 . *U	*2YD 0HQS9430046
T+ /LMB_HAB75 <	AEI<*BLVDB&BG /B	A. *U9L<BGGIY'SS*	92-DUIPB:72BAEPM	8*2*82Z NI-D:7*H	AA34 J/Y89430047
T+ /M *T, -2-E*0-H	=E*HG:C, . *T /1D	4 EICG3V8OH*/F<B	GF, & DHAITS /1J	*704 2-D&+ -W0Z	EEEO 9C089430048
T+ /NH+ HWO& &EEO	2ABQDOH*S207*.XI	B**HAKOI+08H0H*	BFYH/*O# /1*ZOH*	*W8BGF, & MM<-+1&	/2D )J&89430049
T+ /OEFOMB+EE*-T,	-2YGD2Y*KOH**W&B	GF, & B4<-+QL /2D	QB-H.7;Q 2-D+OH*	E_ &-DW(28G /Q	2BLU *8M89430050
T+ /P GOY2 B*B( H	9A<BGG*M& C, - .5	=  H&O,70  H&E, /	- .WE  H&H OC.P2	:730C.QC2/1U< S5	=I&2 4DM89430051
T+ /P#  H_-00..Q&	:#-HGA-OJ.Q4:#*B	GGI, /1D4 A.CG3U	-OH*/F<BGE K*2 C	-JM-   ?=*BGEH2	<BB4 5&<89430052
T+ /Q6/C,UC U_S3*	:OH**W8BGF, & 4M<	-12C /2DQOH*M<B	GF, & .4<- *C /1L	40Q P1C/ .7 D H	O+J- #ZQ89430053
T+ /R1 -, U HOOH*	U:T-AB-3 D HOOH*	R=*BG /YA.K/-OH*	*W8BGF, & 5U<- M-	/2DQC **VKQEOH*	P(L4 OC889430054
T+ /E&SRROHDPN&B	GG*M< C:OIVU<BB5	#I-&<BB6D Z&HBR	Q2Z  C H_-SR   H	_00B.QH=WOOR.RO	'TLO 4Q889430055
T+ /\$X 26)2Y*HCAU	_XT3   <_X00 IWD	W0&7*672>*7HAF&B	GEB<'SSRR2YD&+B	W0< &E:M*-KRR0H*	ONL- :A289430056
T+ /*SHBRQ0A BE&B	GGI, /1D4 FICG36	70H*/F<BGE3H*-KR	RO DPN-OR.RB*TE7	*672>*2BA /\$ /1;	C P4 9B089430057
T+ /)IVX -J\$?108	W0* AE:P /O'0( -	P)2BGGCUBDRQ2/	3+B WDIH&HC/ IVT	2DA. /1*90H*E_	D&12 *S 89430058
T+ /;Q< P /1*9 P4	W0-HABC5)IVX UA)	OOH* CUHIV, UA*	90H*NFC&HE2  /OH	E-KD=U&BGG=X /12	E0H* 8D&89430059
T+ /-LF, & Y4<- V	/2DQOH*P(L5'IVX	2-J *SSRR DPZL4	IMG -&H0H* AH	F \$ /1X90H*BF-Q	UH& J-089430060
T+ />C D=*BP OH*	*W8BGF, & GM<- XG	/2DQOH*E_ &-D	W(28G*Y2 YC 12	WC&BG **L  **OH*	R=EO =BD89430061
T+ /IA4HG&AMI MD	O&L < MD4&L.B HI	C 12?>M0# DE64-D	2C- ?>KQ_OB QH O	A&P_A:EOAFHZA-3S	. *4 :#D89430062
T+ /SD2/ &  (C: O	A&P_A+OAFHZA-L0	CKQ-<*4D>E2<HD	>&S 2*4<-OH**W&B	GF+D<*4<-&K8<H0H	-&88 4AU89430063
T+ /S*OH*E_ **K+J	I-<BGHJ-<*4D>E2	<HD>>E&S 2*4<-OH*	*W8BGG&XB **I MD	4IS4( MD4&L&2 EQ	< MD 3K<89430064

8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/T:(DDBC-EACBQ \_C&EA;4D00 DQ\*E& A&LAA<BG / . / 1( -RD 0 FH5AKC> FH4:EA5\_C D?=MD OC-D 0-M89430065  
T+/U5.UU?=-E8A.UU ?=L?-.-:EB\*8C Q,B\*8| ?=\*HAFH1 9COC2DA/8B C2U R 9A-C2UA( Q&C2-E5 :- N\$ 89430066  
T+/V0&Y\*G;G OA R<\*HA L4 .U&2" 9OHDRFO0A&A&Q,\*B G 4BAX80-H CO IW + KQEIT<8-BQ G&Z E:D89430067  
T+/W,B&C D I-M:-BQ D+ YVALUEI-P2U - #-BQE+8 WAC-AI-- 2U #S -D4 /V-|H WAHGH5:1-P2 E\* @\*2Q \*B\*89430068  
T+/XWC\*HGJLOBI-Q + KQGI-- HAM4C WA2QFO-DWA10 CI\* G R# C /OH; KQ EI\*@< KNDI\*@< LF >I\*@ JZ89430069  
T+/Y/( HRQ.- IH EA<BGFDP /D (- E&CO |\*Z@\*4<-|E @+% AFVH\* -YCA-E N|E WQ|HAC&BG /D FH2Q L2 89430070  
T+/Z\*TBG SHI\*ZE QFTC2/0&30HC3D+C 3S< 5YBQ00H\* C& HF&Z< J&G|F&@\*TO :@Y\*+(-ED00AFY\* @\*CO E&M89430071  
T+/DP L0: @5S @5T COD?=-K\*9CE-@<08 A.UU.\*E)FDO( K\* 9|CP JZ&N- CA Q|CXAPJ&Z+ D@+T3 |CY 2LH89430072  
T+/K&Z DI @+?| Q-|Q8|+HO<BG @AKQ&OH\*SZ3&HF8& 4 /> (E&S/ OVIR VU&OAIQYV300GIR ,A-0 @J889430073  
T+/Z( 20:IV\* < 20 YIV\* < 202IV\* < 20 @IV\* < KQ\*I/Y; KQ \* E&AI/OH.JOAI/8 CO-IB G4 |HAHAO AF2U -/U89430074  
T+/HAJO F2QAG SIOD\*4<-E2 <G4H -E&SF< C3 I/D @\*2Q&| WH?+H TF <I/YISSQ\* <QUHG&E QF:Y R3-89430075  
T+/>C&BYBOQY&/LB <IS OSSQS<HUMICB .ISQ5 KQ\*|E WDIH AACOGISY' BQD& D SZ08AF8&W\*HB C /0 HQ89430076  
T+/>= C70|\*? -JL ?C-DWDSQ\_OH \$YT4 I/CZ-J3 /L<| H WH&BGHD\* BQD& D SZ30HIS, /2HX|E WH& 1L\*89430077  
T+/?9-J<OH\*SZ3& HF=- /1D4 ECG2Q \*LEDAIT-2-J-@DBQ DOH\*-5&OA.P&W|00 A.PQW|@BGHD- /0 (- 09889430078  
T+/04GC-4 JOOI H \*(CHB.P|B MH OH\* -5R0 CK &GS -D 4 K\*9C&D?=J000 D \*DHOA K\*#0-D CH B 9LY89430079  
T+/170H\* C&HGIU < KP8IVD< KP:I-M | 2R&IV? /OHKOH\* E H&1@V=747 |H AA3D IVT2/21(-H WLIH 53&89430080  
T+/2D 60\* KR&A3Y EIVT2/1(-H WLMH AA3Y-IVT2/OU\* BR R 3Z IVT /O (- )D00AI--WM00AI-Y WA\* 18\*89430081  
T+/3V/1D4 /CG2P #LEDAIT72-NJ( &D W+HAC44A KQ&@YD 1(-)D\*HGACO-IS, /2HXOH\*\*+L-EIVT 2UBH KHM89430082  
T+/4-OH\*)I&BGF& /OHEV&BG SHIG&B G /Q&B2QD&OH\*SZ\*H GBCO<IS, /2HXOH\* C&HG&E< K?VI\*@ <GKO 4.-89430083  
T+/5& 2?V&Y\*D( - 1Z OAH&\*V300). < ,100A.UUW03&AGRO 4 /6-OH\*)ZLOAGNY @ J5&0-D?=<HBHIZ 8 #L89430084  
T+/60&Z I. @& O\* /16VC- )D/5E8-H &|E&D)O\*HAEC5 GN, J5R| )030BGN, /15R|J 10& AGNX /OH TU89430085  
T+/7JFZGE & O-H <BG 4BA6:OH\* BFYD: <<GKOC. L /O (- --P<BGG\*H < 256I-<4 J+(- H -MTM 3#889430086

8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+/8< J\*G >V \* K5& -OC.PY>W O .PYOW O .PUWALO W.X<@ K\*@+H >V|H E-T/ .ZL2DF08H&B: M&/ 73-89430087  
T+/9GOT-E.ZL2DD& 8BB:MA/ >+ E>V|H &FC-B.ZL2D C& S5 'C D>@MD2(|EA(|H GN\*HB.P7& L7QI 8F|H 7H&89430088  
T+/B/4.B S5\*0-D =YCO +AT2/3|B S5 \*0-D#SC1->AT2/2L B S5\*0-D8F|HG\*H A.ZXB S5\*@Y\*+O-D ># O O 289430089  
T+/:886E-O#B S6 F( D>@L&A.>"/1' JOH&E C&L&W @B GG94< K\*#IT"/1' NC- ?\*BQ\_C D\_1B" #|BQ 81089430090  
T+/#8.XGB S56| H )\*BGG57 /1D4 E CG2\*#OH\*->L50.\*% @\*B\*#OH;Z&BGGD3 B MH O-H\_\*74C |H ADP4 59U89430091  
T+/@3\*OC -J\*04-D A8-HA0H\*:@,OC +H B \$7\* |HAA#3\* <B GG03 /1=10H\*-CL5 O.\*%@\*B\*#&-DDIFD ?=00 7&H89430092  
T+/> K5A.\*%@25 50H\*E\_ A&L&?=@B GG97B & O-H 8 AG50W.@BG 4BA= \*(ED)\*#7\* |HAH&X7 \* |H 5&89430093  
T+/=Z-J1\*-C2 &T B L-Q( D>@RO C K' &GS -G /1\*V(ED >@\*BGG7&4 K#?OH\* C&HG#-(=292E? \* J& |T<89430094  
T+/U& 4-.ZICG& AG\* C /O (- -5 7 \*.XIB\* @AG>Y(G2: K&1 \* J#DOH\* C& HG=-<\*2:K.Z<<G26 L.RE 8#D89430095  
T+S -O\* C&HH. I 2/0-@BBQDOH\*SZ01 I.3U?+-11.8&?/60 G.7-OC&OG.5<O&A&O <.4\*99\*BG /DAKS= DCDU 1AM89430096  
T+SAE.8&?3&BG /D BKS=DC D?4KQ&O-D -&HB&-?\*C2=D BO 1.7 OH\*BG/ ?/B& NOH\*BG/ ?\*B&9OH\* BG-H 1R\*89430097  
T+SBN.\*D>@04-.3U ?E-HAC 4-.3U?@-H AG-HGC<BGH.C /OH E-MY?/ 11.8&?+\*B G /DAKS=DC-D?4K\* 3C&D J,<89430098  
T+SC&.D?\*-HAB\_H AD+HBD<BGHC, /OH E&V4 IS, -E OH\* U2C&HMH 4 KDM( H /C 11.8&?/41C.8& ?\*+H ) 089430099  
T+SD. K'V0-H?&04 C2 &V&E B&E C 2/OR&KOB&K0 4 K\* 9CED?=-K\*?@YDH4-D AB-HA0H\*-&CHA C B - :H&89430100  
T+SEF <BG @\*B #@Y\*D|FD?=-3&HMH 8&B\*\*@Z O+ /B \*H &C44A KQ9&-D10H\* /P?HGGM4A K\*#@YD NLE& 6SY89430101  
T+SFA KQ7O D|BC1 IS, /2HXOH\*+6&B G 4BBF4C DV=SQ EC DV=BRJCODWEBQ MC-DWEBQ\_+F W&H &|< \*0M89430102  
T+SFA/109+A WDIH &GP-HA& &HPJ( &\* W&H&AETONISY< K\* 9IU| /2HX| OWH&B GH& /O | UWH&B GH&\* &-Y89430103  
T+SG7OH\*W&BGF,& C /2DQC&D WEBQMC-DWEBQ\_+B BB?H&B&C5\*1/| -&H OOH\*\*+L--IVT2D \* 8&BQ 01&89430104  
T+SH20|H&. <BGF,& AD<-<|P /2DQOH\* E -&DW(T-IVT D HO|OBWO\*BA&HL /2GN+A W&CBE+|H 8&B& JIU89430105  
T+SI--H&BCODIS, /2HXCODWEBQMC&D W02Q5@YDDOH\*S(@B GGCU( KR&IU| -&H OC-DWEBQ\_+ -W&@B &HMH @H-89430106  
T+SHYOH\* <C&HH&Q 4 KHS(|DSZ/OA+U AC-DSZT,&C-\*B DH CL5B DI: COD=6KQ \_O DSS\*HA C /O (- 3 89430107  
T+S.TI+U< BLIISY KQD&-DFCADVUBS X|&HMH?HAA-O&IR Z 3&CIS,Z &Q<CKD &H|H'ABQD&-DFCAH VUBU 7#Q89430108

8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+S<:IL4EIS,2 EQ	<C20&H+&ASQD&-D	FC OVUBTH &MWH?H	AA-O.IR Y134HIS,	2 EQ<CSO&HJM*BKQ	D&-D',889430105
T+SIRA-OIIR ZKT4	HIS,2 EQ<D&O&HIM	*C2QD&-DFCA&VUBX	DIJ WH?HAA-OJIR	Z:34-IS,2 EQ<C&BO	&HLM E2D89430110
T+S+M J<WH?HAA-O	KIR 7TT4MIS,2 EQ	<C20&MR&EKQD&-D	FCA VUBW JQWH?H	AA-OTIR Z:C4PIS,	2 EQ #Q&89430111
T+S ICA<VUBZ&EIJ-	WH?HAA-OOIR D*L5	IS,2 EQ<BK&O&HLO	*B2QD&-DFC 8VUBV	R &OMWH?HAA-OJIR	Z& K:M89430112
T+SEH/OH: SQ-I&T	/OH: SQSIS. /OH	: SQUI&3 /OH: SQ	WIRB< B&BIS, /OH	EOT VUQU OH*BFYH	,I&O LOM89430113
T+SJE &-WH& AIB*	BAB:MOI -=<BG /Y	BF2D<OH&-C&EIS,	-J*B JMH?HAA<B	GGJL /OH&-&499&O	~.8 JY<89430114
T+SK .&&<IK'-.:7	/OH&-UQ?-'OA. 'D	WF-OAIGD70&BG /B	B.'D? &BG /B-	2-4~.8 7&-HAB&4	~.6 -SQ89430115
T+SK#. "G2-&T /OH	E-MQ?-'BAIGD70&B	A.'D70&4AIGD71*	DIF. /OH&VU&B SR	<&-DIOM*)I&BG /D	OIK' &-Q89430116
T+SL&IS,2-JD'&BQ	D&YDHOH*BHYU OH*	BE&BG /DFHK&5/C	U9KL(OH*BHYU OH*	C&HIE&B- H &	IIM' 9.Y89430117
T+SMII-P2 &-O-H	OHDB&BG 4 KM	: ( HV T&DI/-5ABQ	8ON4V0&FIK&CASBN	HOQOV.3OCIS,2/OL	AS2M ' :089430118
T+SN&MTO I/CB &	O-H CNDI/T&S G	/2MHI DWH&BGIL<	@ASQD&OH*V<3OEIS,	/2M&I<PV2* E&+-	X&D' 2,489430119
T+S&X&DA &DA &DA	&DA &DA &DA &DA	&DA &DA &DA &DA	&DA &DA &DA &DA	&DA &DA &DA &DA	&DA &DA &DA &DA
T+SPS94A &BGR->	X9=) &+.A6P&X9=	X S-5P1D A7ZD&L	E9*XC1MCX917A EO	P A* EO P A* EO	P &:U89430121
T+SQ P A* EO PIX	T5-C2DMA 3~<TH	..... &HX'<BI*H	C ..... B&I	..... VB &-	NA-89430122
T+SRQ	..... & C Q	A MA& ("&E&I&A&D&G	&Q*I&OUA O&g/ 1&E	AS(UASFE &FA-9=	X90' =A<L9430123
T+SEL	*-CWO)XN2)PG&FA	6: N& C1Q C2& P	O&4CR9(N 1_&R&+	H2:  1<PV2* E&:	N&I' :TM89430124
T+S&+&MA-&< H1*	K&<LE9*XC1MCA9&G	I4&GB2) I8=TR&N	&I& QDCD1:P1O&N	9(-DD: E&: N& C	2&F' 7:089430125
T+S+I& LO1<PL&4C	D1:P1O&N 8=TP1MC	D1: E6 L15*GT2) &	N6: N& C3&FA 6*X	P5' E&<LA8&E 8&P	S8'U' KI&89430126
T+S DB'N & J QDC	S2)PG4&N O&TA6*G	C8&PRE+ E8 IR&N	& N QDCR1*GD& L	O1<XF2*PDE+ E8>	R8'M' =8-89430127
T+S)*& C6&FA 9_X	I8&N 1>LNO= I5_N	8&PS8=I O1PDE<P	A9(XTSMCO*4A-&<X	N9*GL2*J O*LD&M	1<M NYD89430128
T+S::&2PC&X&D&51X	TSMCO=DA-&<XN9*G	L2*J 1<GTOMCD1:	EO=  I5_PR&N & V	QDCU5'~E6O&L5) &	E6M' 81U89430129
T+S-50&GS1MCA4'~	NOMCT1:..T&EA O's	N8&XN9 8UBUCPS_1	L6: N& CA&FA 8&P	S84CPO; T1)XN&<X	N8>< M3889430130

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8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+S-06;LC&X&D&5;. R8*N &+  QDCT1:.	T&(-A8= E6)N 9*X	T5MC1&DA-& E.&<. O0)XO&<SUS* T2) &	N&&< 2CY89430131		
T+S/ ,1: .T6: N& G	I&FA 9(-P1)V/4's	M1)V O&GS1MCA4'~	NOMCK1;T&S&GR1DC	T1:..T6: N& G2&FA	1<U' ~.M89430132
T+SSW&-LO:/ 1 P	D& &F&+ E8>  5<P	S8&GG1*GT&GC2D_	5)ST& XEO*LY5) &	T& XO:FGU5*XT&	H1< 3, 89430133
T+ST/4&XN84_ 6*P	QK6GN5(  O:PA2)	-5)R 2)PT1)XR9(-	T2: B&<XN84CE6)X	O6*GT&GC2( LE5:	O&- "D889430134
T+SU*1* K2)PT&(-	N1DCN5(  5_PAB=	A0&/.&<TU5*  O>L	S: LAB&E 5<XS0' &	M5&GR1;LNI:-P1*	T1*E' EOY89430135
T+SVP& XEB_-O5:.	E6:PI&+ O&+.E4&P	C8&P0&4CT5UCC5<L	O1;N.&<TU5*  O>L	S:~LNI:-P1* T1*J	9&D' :.M89430136
T+SMKO'.U5).N5) &	N& XEB_-O5:..E2)P	C5_XR1* T& XEB_-	O5:..EO* C1)-T1*J	2)PVK4CA1<LRK'X	E8_+ M3 89430137
T+SX(5_PS1MCSQ*	1)ST9_XO5*  8>	A8=LS& XEO4?M2*	R5UCC5&LE& P0&4C	L5&GD1*LU5*PX54_	2IM' 4R889430138
T+SYH&V.&<GF8&P	R&< O5; ..&(-O4'	2:..S9<PD5)R 2)P	T6M_ O*ST1)V &UC	S1* ..&+ ..5U_ 2:.	S9CM' N&-89430139
T+SZC1D'CD9(XI5*)	O' &N84_ 5' &L4&X	N0' &R6*PC&4CS&B&G	T9+I 6*PC1*XV1*J	1+LR2)PG&< O5;	..& * &H889430140
T+S2=5_ LO&GR& P	O&4CE6+LA44CT&UC	S0)XR1:..P5_PS1MC	WO:  5)ST&+..TO:	U8&PRO:..E&<GL44C	U5)* 8: 889430141
T+S&O&6)ST1* T1*J	1)XR5_XD2*G&L&<P	B0&L1O4CC2<6&R4C	T5UCB1MCR1)-EO:	E1DC15; O&<LA8&E	8>Q' &M89430142
T+S,4& I, 'D_ & X	E8&PT&<TA4*  1?	-O&GU8&XO5MA-&<P	R6) &R&UCNO; / 5&	C9(V 2* &R O&TA6M_	2:;H' "E489430143
T+S&X&E( PO&4VO)	I1( PO&<PR6) &R1<P	V2* E&+~X&<GV0*X	LO*.LI &P1)XAB&X	O5MCC2<PC4UCC5_P	T6)Q' M-89430144
T+S_D44CC2<PC4UA	&<LA8&E O&TEO' I	&DA &DCE6+LI5'L	E5:  O&TEO' I 2)P	T1)XV1)PT2) &N& X	E6<< R.089430145
T+S>V5_LHO)PD& X	E4*PC&4A 1<PV2*	E&<PNIDA &DA &+L	N2:  8_-EO&XF:DA	&DCD1;PIO&N O>L	S: D' )YH89430146
T+S7-&DA &+..TO:	U8UCR1* E2;PE1DC	F6) &M&<LE9*XC1MC	X9=..TO: U&UCE9'~	EO= E1DCF6) &M&<L	E9*U' "HQ89430147
TAB7V0&N 9=	.....	.....	.....	.....	.....
T+S0=&<X&F&<LE9*X	C1MC&S2( SU4&J O&N	O:PA2)  AO_ E&<G	N1DC18UCN5) (&<	H1* R&< O0:  O&G	B4&M' QOY89430149
T+S198UCA5*J/5_V	6*PF11V 8'R 8&T	E&<LE9*XC1: R5>L	B4&PS2( 8O&XN14C	G9<XD1M_ &+.S9UC	O&M' "NQU89430150
T+S245<GY&<..E&+.	E84CT5UCL5_&P& X	T5MCO&MCF5_V O's	N8&XN9( 8UBUCPS_1	L2)PG&X&F&<LE9*X	C1M' "D&H89430151
T+S372:  OMCPE*X	N8&PRE4CC2<PC4UC	F5_V 1_&R5+I 5*X	O5&PRA= / 2)PS1)X	T1*J, & &N& I5* &	1: && 89430152

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OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+S4D004705 Y&G	VO*XLO*.L1MCD1:P	I0@PSE+I4*(03N	9+.E1DC15MCF5_I	L5>I5*1 61\$U80X	N1;H *YU89430153
T+S5VK4CR1;.E8XC	H0 T6+ 0E<-0E(\$	NK*XEB3PT&<TA4=(	8'R 13PT0@/ 1KP	V2* E6+.T0; U6-H	X*NY -I089430154
TCB521<PV2* E&+	XDMA 0				R:U89430155
TAK:Q*0 B&					"E89430156
T+S#V0*.C1<PF1@T	I4).L5(PO5*TR8>	U9;5X:+X0@~.3* P	6*#T9&EA-QMZE;U_	\$E7<PF1@LN5_-M9	;\$X8 8/*89430157
TCK#3L5*?~6, "  @					51489430158
T B@:6					MS889430159
T+S="&<GD1(V EDC	0& E @UC3& J *MC	6& ) =DC9&<E 0UC	C&<J 1MCF&DA EDC	0& E @UC3& J *MC	6& * ~Q 89430160
T+S*=:& / =MCA&<I	04CDE&N 1- 12\$	F12\$F12\$F12\$F12\$	F12\$F12\$F12\$F12\$	F12\$F12\$ DD<- .8&	"A 2Z<89430161
T+T 5* 1;~P1*	Y1*LR1* E2;PE1<L	IO)( 0*LD6MCOIUC	D1;PI0@N/8UCY5>J	93XS2DCT5UCT1;.	T&U 60H89430162
T+TA05; 0E<LA8@E	B>R @674K4A 1<X	A44CF1UCT5UCE5*J	4@XS847R1;.E84C	H0 T&<\$00*\$1&<G	F8@M 42Y89430163
T+TB.6MCE0* H&<P	N8*XYK@XN9*GL2*J	1<PV2* E&FA 8*X	Y&<GG0*XN BI" N	G;/*PE3D1;PI0@N	9=* 6A&89430164
T 3B7PE0 &					#5889430165
T+TDD OHX@*MC S~	5PIE 1> E8>( 5@G	T8@PR5MCS1 TU1 P	C2 PGD*E&@M_ 5*X	E8>I 8@PS84CR1 T	U1;H 6Y89430166
T+TEVB4CT5UCC0 )	L&(PE9=<J0>.S1)T	U1 PT2*GL&(-A8=	E6)N.D*N @U_ 5*X	E8>I 0@GNO@PLL)\$	R&( * @ZD89430167
T+TF-0- I8'R 1<X	S0*\$N5*PC84CC5=&	J1_ A5*J 4@PA9*M	5@GT8@PR5MCF5_V	53\$FQ( I5*N 9+.	A1@M 0\$Q89430168
T+TG&K1GG5/7Y0*L	RQ 50'  )SAUC S~	5PIE 1> E8>( 5@G	T8@PR5MCS1 TU1 P	C2 PGD*E&@M_ 8'R	0@D 38089430169
T+TH04'( 5*PX84C	PO; T1)XN&FA 0*\$	T1 V 5*X15; I5*+	JO>.S8*\$P8W_ 5~	E5MCC5>PE60_ 8@T	E5M :H&89430170
T+TIJO* 082N 2;<	JO".W2; H2)N *MC	S1* 05*LSK1GE& )	&<XFE< 09*PR&<X	SE( E1>( 9') 5(\$	R1M " Q-<89430171
T+TK8@TASMC5&+.	E04&J1_ P1*J 9&X	L44CT1)XM2)PA8@N	0 PD&(  EO;PE&(-	A8= E6)N.D*-OG;T	A1(U 0B&89430172
T+T.GQ 50&D )EAU	C S~5P1GAMA5-0*.	C1<PF1@T14).L5(P	05*TR8> U9;5X:+V	G03N5_N 1<XS5'	A:AD "8089430173
T+TKB@W )&A C5_~	YE<GB5>PE&<XNE+	H2;I 4@XN1MA &D	I&<XN8@PR84CC4-	GO JO" 1:D'@;5_	8KV "8989430174

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8943 DA FUNCTIONAL TESTS

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+T< PD5)3M9E;X'	<5W'~V';-OD)= C	1@? 4'~57= V,K6C	AD*N G*TC5_~Y&<G	B5>PE&<XN&+ H2;I	4@U " .389430175
T+T(85*N G)-J1;-	1QAGFHA7U\$=.E44C	P1)N 8@PS80 "A7	Y\$>.E44CP1)N 8@P	S81GG5/7Y0*LRQ "	"E489430176
T+T+3G;-C S~5P1E	E&C1 :<PHD*E 2<-	JO~H2AGBP@THD#	G2<-J06"H2AGD5@T	HU*J*2<-J1;~H2AG	FL@- @H&89430177
T+T >2AGF@a-J05?	0@AGDO"COD*J-8@P	S84CP0; T1)XN&<\$	06MC3@?~7Q DJ1M"	A4@XG5)LE5;<J1-A	*GM " QK089430178
T+TEZD=LN5*X08@P	C8@PD&<LA8@DJ12@	1QE0J1?~@15"E1JG	F&J7Y0*LRQ "*****	1Q <BI" N" <E&1+~	JOV@ 08Q89430179
T+TJU2<-J06" H2AG	D~@THD*R 2<-J15"	H2AGG;+ E8>( 5@C	T8@PR5MCF5_V "a".	7'6C2D*/?2<-J1G#	A4@U " =-89430180
T+TK~1*PH1)PTD*V	"2<-JK4"H2AE<PAT	HDM3XPA5 "D=LN5*X	08@PC8@PD&<GR1*E	GDA GDA*DM572<-	JL_* 3Y<89430181
T+TL&@  JLX"H2AE	19"CODNA 2<-J4N"	H2AGK\$@THD)( "2<-	J5M"H2AGOP@THD))	?2<-J6G"H2AEEL@T	HDN\$ KKM89430182
T+TMNP@THDN1?2C1	E<MJP+M):<GD60	"*****	GO C S~5\$15	-1 \$R&< L9+.T1)X	E1DCP6*XN8@PR8UC
T+TNGOMCS2(SU4@J	B> A6;( 5*PX84C	L2)PE&<TE6*N QFA	-QFA-\$& H1* K2)P	G&(-R5\$~R0)J 8@G	BQ*M =5<89430184
T+TD.6*GS1MCU5)~	R5>(.6+ 0E<GD1(V	/1+LPQ*\$I1) D&(L	A6)I 5_XD1)XSD*	OD178 <P0@J7H <R	80J4 08M89430185
T+TPFQC3GP@HJ1(-	1AJGE:A.FMAGFK/O	5EJUJO=Q):<GD60	"*****	GO C S~5L8F	B-8KE/Y;MSQD<TQ:
T+TQAUZ+MVR&PHW	EXR;~DMCXG0BSY:K	VZD;YDEE% ,E?>,>	@?%~H>\$XHB/D#B	18,+4)\$E7>GUJOM@	I&DD "EJ*89430187
T+TQ@&U(DJMRGKDV	JMV MNRP0EVSQ6J	VRW)Y&PA1*X(4)PR	7;GUJO~*)Q<GB0@L	E1\$~H2)GK4*LN5_~	Q6;H KR 89430188
T+TR78=LV9>~Y;~C	1@? 4'~57= UJ0V@	1&DA&QFG +4<D*	GGDAHK41(LU'E051	1PV'DE61_5W';:71	'~X@ 79*89430189
T+TE2D*(?GMCH2@3	(3\$"E6'3)7_ "D:=3	_#>"="3"/GD515	-50GL&< H1* KE\$M	N_JMJI MCE5_J 0@T	EO'H 2B089430190
T+T\$>JUJ1U@)E&A<	J1'Q):<GD60 "*****	GM J1<~" OHX*M"	N1;R 4@XN1MCF9(P	C8@X05MCC2<PC4/P	N1;Q \$H&89430191
T+T*Y&( I5*N 1>L	NO= I5_MN5*PW&(	I5*MN5*PWE)PE9UC	L2)PEE)PE9UCL2)P	E&<\$U5* T2)\$NE)P	E9U " \$1M89430192
T+T)T4@XN1MCF9(P	C8@X05MCC2<PC4/M	1L+ H2;I 1<GTOMC	N5>( 9*XS2*.L10G	E5_J 0)PDE(N/44C	11'M ~2*89430193
T+T;:5_XE1AMRGMC	E5*J~5&R~5<PS8&G	G1OCT1)XM2)PA8@P	S&(-R2)PTFJP25*J	1)\$M&( I5*N 5)\$	Y&C' 1.389430194
T+T~R5MCP6*XN8@P	R&(SUB~U81UJ1'Q	):<GD60 "*****	GM C BABG4<-0* C5_X	D2)PE&+ 0E(X09+	I5*M N\$89430195
T+T~M& C2E4CD1;P	IO@N 9=) 2;I OMC	M5&LE44CX&DA &DA	E&DCP6*XN8@PR1<X	S5' A: HX@MY@&DA	*D** 28U89430196

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OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

\* SSW11 - R ESTART ROUTINE 1 COMPLETELY ..... \* ..... 89430241

\* SSW12 - D ISABLE 90 SEC. T IMEOUT ON TEST P ATTERN ADVANCE ..... \* ..... 89430242

\* SSW13 - D ISPLAY HAS SELEC TOR PEN BUT NO K EYBOARD ..... \* ..... 89430243

\* SSW14 - D ISPLAY HAS NEITH ER SELECTOR PEN OR KEYBOARD ..... \* ..... 89430244

\* SSW15 - E NTER CHAR. FROM DATA SW. IN ROUT INE 04 ..... \* ..... 89430245

\* SSW20 - S KIP TEST PATTERN S OR DISPLAY OML Y THOSE SELECTED ..... \* ..... 89430246

\* ..... B Y SSW 21 THRU 26 AS FOLLOWS: ..... \* ..... 89430247

\* SSW21 - D O TEST PATTERN 1 IF SSW 20 IS ON ..... \* ..... 89430248

\* SSW22 - D O TEST PATTERN 2 IF SSW 20 IS ON ..... \* ..... 89430249

\* SSW23 - D O TEST PATTERN 3 IF SSW 20 IS ON ..... \* ..... 89430250

\* SSW24 - D O TEST PATTERN 4 IF SSW 20 IS ON ..... \* ..... 89430251

\* SSW25 - D O TEST PATTERN 5 IF SSW 20 IS ON ..... \* ..... 89430252

\* SSW26 - D O TEST PATTERN 6 IF SSW 20 IS ON ..... \* ..... 89430253

\* SSW27 - S KIP FULL BUFFER PRINTOUT IN ROUT INES 03 AND 04 ..... \* ..... 89430254

\* SSW28 - M UST BE TURNED ON IF CPU IS A MOD EL 4 AND DEVICE 40 IS \* ..... 89430255

\* ..... O THER THAN A KEYB OARDLESS 3277 MO DEL 1 DISPLAY. .... \* ..... 89430256

\* ..... \* ..... 89430257

\* NOTE - SSW 10 AND 11 ARE AUTO MATICALLY RESET AFTER THEY ARE U SED \* ..... 89430258

\* SSW 20-26 ARE PROVIDED AS A C ONVENIENT WAY TO SKIP TEST PATTE RNS \* ..... 89430259

\* ..... \* ..... 89430260

\* ROUTINE 13 IS A MANUALLY SELE CTED EXERCISER, BEFORE MANUALLY ..... \* ..... 89430261

\* SELECTING ANY ROUTINE, YOU MU ST HAVE RUN AT L EAST ROUTINE 01 THRU \* ..... 89430262

DATE 26JUN75 25OCT75 15JAN76 14MAY76  
EC NO. 825023 825032 825034 825035

PROG ID 0894-3  
PAGE 44

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

\* 02 FOR THE CU RRENT DEVICE BEI NG TESTED. .... \* ..... 89430263

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EB/E\*E7\*=-DC\*PH\$ =\*7M&F| | C FS ASC R A SO Q ..... 08070608730 517764, D89430265

LAST PAGE

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89F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			2	DECK	1
			3	SEQ	0
0A00			4	WXVX	START X'0A00'
			5	TREP	
0A00 89F1		0A01	6	DC	XL2*89F1'
0A02 00		0A02	7	DC	XL1'0'
0A03 00		0A03	8	DC	XL1'0'
0A04 0000		0A05	9	DC	XL2'0'
0A06 0A10		0A07	10	DC	AL2(RTN01)
0A08 1108		0A09	11	DC	AL2(LDG)
0A0A 894000		0A0C	12	LINES	DC XL3*894000'
0A0D 801000		0A0F	13	ESCA1	DC XL3*801000'
			14		
			15	NOTRDY	EQU X'58'
			16	ATTCHK	EQU X'5D'
			17	SIOI	EQU X'5E'
			18	ABSCA1	EQU X'0DFD'
			19	ABSCA2	EQU X'0DFF'
			20	XR1	EQU 1
			21	XR2	EQU 2
			22	ARR	EQU 6
			23	PSR	EQU 4
			24	IAR2	EQU X'A0'
			25	MALT	EQU X'222'
			26	PRINT	EQU X'21A'
			27	UNPACK	EQU X'21E'
			28	CAR	EQU X'8C'
			29	TAR	EQU X'8A'
			30	SAR	EQU X'89'
			31	STATUS	EQU X'8B'
			32	BUSY	EQU X'8A'
			33	XMITR	EQU X'8A'
			34	ENINTR	EQU X'02'
			35	ENABLE	EQU X'CO'
			36	CNTRL	EQU X'38'
			37	MORUC	EQU X'88'
			38	OPT3	EQU X'08'
			39	OPT4	EQU X'10'
			40	OPT5	EQU X'20'
			41	PREF	EQU X'A00'
			42	SUPER	EQU X'ADA'
			43		
			43		
0A10 01		0A10	44	RTN01	DC XL1'01'
0A11 00		0A11	45	DC	XL1'00'
0A12 FFFF		0A13	46	DC	XL2'FFFF'
			47		
0A14 F3 58 80			48	START	SIO X'80',SIOI
0A17 F3 58 C0			49	SIO	X'CO',SIOI
0A1A 30 58 1515			50	SNS	BCNT,SIOI
0A1E 00 01 1515 1564			51	CLC	BCNT(2),X7200
0A24 C0 01 0CE5			52	BNE	MICNL
0A28 3C 02 1517			53	MVI	DVBCNT,X'02'
0A2C 3C F9 1516			54	MVI	DVBCNT-1,X'F9'
0A30 30 58 1515			55	MICLP	SNS BCNT,SIOI
0A34 C1 5D 0CE5			56	TIO	MICNL,ATTCHK
0A38 0E 01 1517 1536			57	ALC	DVBCNT(2),UNE
0A3E C0 20 0A30			58	BNDL	MICLP
			59		
0A42 F3 58 80			60	NORDY	SIO X'80',SIOI
0A45 F3 58 E0			61	SIO	X'E0',SIOI
			62		
			63	USING	MICRON,XR1
0A48 3D 00 1532			64	MICRON	CLI PASS1,X'00'
0A4C F2 01 94			65	JNE	ALONE
0A4F 38 01 0A0C			66	TBN	LINES,X'01'

S  
E  
C  
T  
I  
D  
N

P  
R  
E  
F  
A  
C  
E

TIO NOT READY  
TIO ATTACH CHECK  
SIO IMMEDIATE  
ADDR OF BSCA-1 INTERRUPT ROUTINE  
ADDR OF DA INTERRUPT ROUTINE

ADDRESS OF SECTION PREFACE  
ADDR OF RETURN TO SUPERVISOR

LAST ROUTINE

DISABLE  
ENABLE ATTACHMENT  
SENSE 1ST WORD  
CHECK FOR CORRECT DATA  
ERROR IF NOT  
SET UP COUNT  
SENSE CONTROL STORE WORD  
ERROR IF ATTACHMENT CHECK  
INCREMENT COUNT  
LOOP TILL DONE

DISABLE ATTACHMENT  
ENABLE MICROCONTROLLER

TEST FOR FIRST PASS  
JUMP IF NOT  
IS KATAKANA FEATURE INSTALLED?

89F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
			67	JF	NOKAT
0A53 F2 90 0C			68	MVC	DATAE(1),KATD1
0A56 0C 00 1401 16EA			69	MVC	DATAE-2(2),KATD2
0A5C 0C 01 13EC 16EC			70	NOKAT	LA
0A62 C2 01 0A48			71	SLC	MICRON,XR1
0A66 5F 03 79 79			72	SET	(4,XR1),SET(,XR1)
0A6A 7C 1C 79			73	MVI	SET(,XR1),X'1C'
0A6D 0F 03 150A 150A			74	SLC	ONFLG(4),ONFLG
0A73 3C E0 1507			75	MVI	CNFLG-3,X'E0'
0A77 5C 01 40 7E			76	MVC	TLIN+3(2,XR1),CONS(,XR1)
0A7B 7C 08 3D			77	MVI	TLIN(,XR1),X'08'
			78	NEXT	MVC TLIN+1(1,XR1),TLIN(,XR1)
0A82 7C 38 3D			79	SETTBN	MVI TLIN(,XR1),X'38'
0A85 38 00 0000			80	TLIN	TBN *-9,*-*
0A89 F2 90 05			81	JF	UPL
0A8C 1E 03 150A 79			82	ALC	CNFLG,SET(4,XR1)
0A91 5E 03 79 79			83	UPL	ALC SET(4,XR1),SET(,XR1)
0A95 5E 03 79 79			84	ALC	SET(4,XR1),SET(,XR1)
0A99 5E 03 79 79			85	ALC	SET(4,XR1),SET(,XR1)
0A9D 7B E0 76			86	TBN	SET-3(,XR1),X'E0'
0AA0 F2 10 21			87	JT	TALONE
0AA3 7C 02 3D			88	MVI	TLIN(,XR1),X'02'
0AA6 5E 01 3E 3E			89	SHIFT	ALC TLIN+1(2,XR1),TLIN+1(,XR1)
0AAA C0 2C 0AA6			90	BNDL	SHIFT
0AAE 78 80 3E			91	TBN	TLIN+1(,XR1),X'80'
0AB1 C0 90 0A7E			92	BF	NEXT
0AB5 4E 01 40 1536			93	ALC	TLIN+3(2,XR1),ONE
0ABA C0 87 0A82			94	B	SETTBN
			95		
0ABE 00000000		0AC1	96	SET	DC XL4'0'
0AC2 0A0B		0AC3	97	CONS	DC AL2(LINES-1)
			98		
0AC4 3C 80 1506			99	TALONE	MVI LINE,X'80'
0AC8 0C 01 1504 155C			100	MVC	CURDEV(2),PCLL
0ACE C2 02 1507			101	LA	ONFLG-3,XR2
0AD2 34 02 1566			102	ST	SVXR2,XR2
0AD6 3D 89 0A00			103	CLI	PREF,X'89'
0ADA F2 81 06			104	JE	ALONE
0ADD 0C 01 0DFF 1519			105	MVC	ABSCA2(2),AINT2
0AE3 F3 88 C0			106	ALONE	SIO ENABLE,CNTRL
0AE6 0C 01 1502 14FE			107	MVC	CURRA(2),ADATA
0AEC 0C 01 152F 152B			108	MVC	ATABPT(2),AATAB
0AF2 35 A0 1519			109	L	AINT2,IAR2
			110		
0AF6 3D 00 1522			111	CLI	PASS1,0
0AFA 3C FF 1532			112	MVI	PASS1,X'FF'
0AFE F2 81 65			113	JE	GO
0B01 0E 01 1504 153E			114	UPDATE	ALC CURDEV(2),DEVINC
0B07 35 02 1566			115	L	SVXR2,XR2
0B08 38 80 1536			116	TBN	LINE,X'80'
0B0F F2 90 08			117	JF	T2
0B12 3A 80 1504			118	SBN	CURDEV,X'80'
0B16 3A 80 1503			119	SBN	CURDEV-1,X'80'
0B1A 38 0A 1504			120	T2	TBN CURDEV,X'0A'
0B1E 39 05 1504			121	TBF	CURDEV,X'05'
0B22 F2 90 08			122	JF	T3
0B25 3B 80 1504			123	SBF	CURDEV,X'80'
0B29 3B 80 1503			124	SBF	CURDEV-1,X'80'
0B2D 38 01 1506			125	T3	TBN LINE,X'01'
0B31 F2 90 0E			126	JF	T4
0B34 E2 02 01			127	LA	1(,XR2),XR2
0B37 34 02 1566			128	ST	SVXR2,XR2
0B38 3C 80 1506			129	MVI	LINE,X'80'
0B3F F2 87 A1			130	J	ADDDK
0B42 3D 3E 1504			131	T4	CLI CURDEV,X'3E'
0B46 F2 01 26			132	JNE	DEVOK
0B49 0C 01 1504 155C			133	MVC	CURDEV(2),PCLL
0B4F 3C 80 1506			134	MVI	LINE,X'80'

JUMP IF NOT  
CHANGE INVALID KATAKANA CHAR.  
LOAD XR1 FOR INDEXING  
CLEAR SET AREA  
SET UP 1ST 3 BITS USED  
CLEAR THE ON FLAGS  
FORCE MI 3 BITS ON  
INITIALIZE ADDR IN TBN INSTR.  
SET UP STARTING TEST BIT

MOVE TEST BIT TO IMM. BYTE  
SET TBN OP CODE  
TEST FOR LINES INSTALLED  
TEST NEXT IF NOT  
SET ON FLAGS IF INSTALLED  
SHIFT LINES LEFT 3 BITS  
ARE WE DONE YET  
JUMP IF SO  
PLUG IN THE SHIFT STOPPER  
SHIFT RIGHT 1 BIT ROUT.  
DID WE JUST GO TO THE NEXT BYTE  
GO ON IF NOT  
INCREMENT THE TEST ADDRESS  
GO SET THE TBN INSTR.

INITIALIZE TO 1ST BIT  
INITIALIZE DEVICE TO 40  
POINT XR2 TO FLAGS  
UPDATE XR2 STORAGE SPACE  
TEST FOR RUNNING ALONE  
TELL BSCA-1 MY INT. ADDRESS  
ENABLE DA  
INITIALIZE RIPPLE DATA PCINTER  
INITIALIZE ADDRESS TABLE POINTER  
LOAD INTERRUPT ADDRESS REG

TEST FOR PASS 1  
SET PASS 1 COMPLETED ON  
GO START MAIN PROGRAM IF 1ST PASS  
UPDATE CURRENT DEVICE  
RESTORE XR2 TO CURRENT VALUE  
ARE WE AT 1ST LINE SELECT POSITION

CHANGE MI BITS TO C OR D  
ARE LOW BITS OF ADDR = A

CHANGE MI BITS TO 4 OR 5  
ARE WE AT THE LAST LINE BIT

INCREMENT XR2 TO NEXT FLAG BYTE  
UPDATE XR2 STORAGE SPACE  
START AT BIT ZERO AGAIN

DID WE JUST DO LAST DEVICE  
REINITIALIZE BACK TO DEV 40

09F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0853	C2 02	1507	135	LA	DNFLG-3,XR2 POINT XR2 BACK TO 1ST FLAG BYTE
0857	34 02	1566	136	ST	SVXR2,XR2 UPDATE XR2 STORAGE SPACE
085B	3C F1	1531	137	MVI	WRTCMD,X'FF' FORCE WRITE ONLY COMMAND
085F	0D 03	150E 15CA	138	CLC	PRTPLG(4),DNFLG TEST FOR ALL DEVICES = PRINTERS
0865	F2 01	1E	139	JNE	GO GO ON IF NOT
0868	3C FF	1530	140	MVI	PFLG,X'FF' FORCE PRINTERS TO PRINT
086C	F2 87	17	141	J	GO
			142		
086F	3C 02	1535	143	DEVOK	MVI LINE-1,X'02' LOAD THE SHIFT STOPPER
0873	0E 01	1506 1506	144	SHIFTR	ALC LINE(2),LINE SHIFT LINE LEFT
0879	0C 20	0873	145	SNOL	SHIFTR BRANCH TIL OFLO OCCURS
087D	0C 00	1506 1505	146	MVC	LINE(1),LINE-1 LINE IS NOW SHIFTED RIGHT ONE BIT
0883	F2 87	50	147	J	ADDDK JUMP DO THIS DEVICE
			148		
			149	*	UPDATE DEVICE, DATA ETC FOR NEXT PASS
			150		
0886	35 01	1502	151	GO	L CURRA,XR1 GET RIPPLE DATA ADDR
088A	1C 1C	1437 00	152	MVC	EXP6,0(29,XR1) SET UP EXPECTED DATA
088F	1C 1C	1474 00	153	MVC	RIPDAT,0(29,XR1) SET UP TRANSMIT DATA
0894	0E 01	1502 1536	154	ALC	CURRA(2),ONE UPDATE RIPPLE ADDR
089A	0D 01	1502 15C0	155	CLC	CURRA(2),DATEA TEST FOR END OF DATA
08A0	F2 04	06	156	JNH	SETADR JUMP IF NOT
08A3	0C 01	1502 14FE	157	MVC	CURRA(2),ADATA INITIALIZE RIPPLE DATA POINTER
08A9	35 01	152F	158	SETADR	L ATABPT,XR1 POINT XR1 TO TABLE
08AD	0D 01	152F 152B	159	CLC	ATABPT(2),AATAB TEST FOR START OF TABLE
08B3	F2 01	04	160	JNE	NOTST JUMP IF NOT
08B6	3C F5	1531	161	MVI	WRTCMD,X'F5' SET WRITE CMD TO ERASE/WRITE
08BA	1C 01	1449 00	162	NOTST	MVC WRTADR,0(2,XR1) MOVE ADDR TO WRITE FIELD
08BF	1C 01	140B 02	163	MVC	EXP2,2(2,XR1) MOVE ADDR TO EXP. CURSOR FIELD
08C4	1C 01	140E 02	164	MVC	EXP3,2(2,XR1) MOVE ADDR TO EXP. 1ST SBA
08C9	1C 01	141A 04	165	MVC	EXP5,4(2,XR1) MOVE ADDR TO EXP. 2ND SBA
08C6	0E 01	152F 1538	166	ALC	ATABPT(2),SIX UPDATE TABLE POINTER
08D4	0D 01	152F 152D	167	CLC	ATABPT(2),AETAB TEST FOR END
08DA	F2 04	06	168	JNH	ADDDK JUMP IF NOT
08DD	0C 01	152F 152B	169	MVC	ATABPT(2),AATAB INITIALIZE ADDR TABLE POINTER
08E3	C2 01	1506	170	ADDDK	LA LINE,XR1 POINT XR1 TO LINE POINTER
08E7	1C 00	0EDF 00	171	MVC	T1+1,0(1,XR1) SET UP IMMEDIATE INSTRUCTIONS
08EC	1C 00	0EE6 00	172	MVC	SF1+1,0(1,XR1) WITH NEW POINTER
08F1	1C 00	0F03 00	173	MVC	SN1+1,0(1,XR1)
08F6	1C 00	0C71 00	174	MVC	TP1+1,0(1,XR1)
08FB	1C 00	0C87 00	175	MVC	SP1+1,0(1,XR1)
0C00	1C 00	0F7E 00	176	MVC	SN2+1,0(1,XR1)
0C05	1C 00	0C3A 00	177	MVC	TM1+1,0(1,XR1)
0C0A	1C 00	0F5E 00	178	MVC	SF2+1,0(1,XR1)
0C0F	1C 00	0F4E 00	179	MVC	TN2+1,0(1,XR1)
			180		
			181	B	UNPACK UNPACK THE DEVICE CODE
0C14	C0 87	021E	181	B	UNPACK
0C18	01		182	DC	IL1'1'
0C19	1504		183	DC	AL2(CURDEV)
0C1B	1455		184	DC	AL2(DEVICE)
0C1D	0C 01	1417 14E5	185	MVC	EXP4(2),DEVICE PUT UNPACKED DEVICE IN EXPECTED
0C23	0C 01	124C 1455	186	MVC	LOGDEV(2),DEVICE MOVE DEVICE TO LOG OUT FIELD
0C29	0C 00	14C8 15C4	187	MVC	EXP1(1),CURDEV MOVE CURRENT DEVICE TO EXP. FLD.
			188		
0C2F	0F 01	1517 1517	189	SETPOL	SLC CVBCNT(2),DVBcnt SET BUSY COUNT TO ZERO
0C35	C0 87	0E98	190	B	DDPOL GO TO POLL SUBROUTINE
			191		
0C39	08 00	08	192	TM1	TBN 6(XR2),*-# TEST MAN. INT. ON THIS DEVICE
0C3C	C0 10	0B01	193	BT	UPDATE GO TO NEXT DEVICE IF SO
0C40	0C 01	14F5 155E	194	SELECT	MVC SPFLD(2),SEL SET UP TO SELECT THE DEVICE
0C46	C0 87	0D23	195	B	DOSIO GO SELECT
0C4A	0008		196	DC	AL2(ENQ-SELPOL)
0C4C	1640		197	DC	AL2(XMITE)
0C4E	14F8		198	DC	AL2(ENQ)
			199		
0C50	4D 01	01 1548	200	CLC	1(2,XR1),ACK0 TEST FOR RESPONSE ACK 0
0C55	F2 81	04	201	JE	WRTPRP IF SO, GO GET READY TO WRITE PATT.

09F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0C58	C0 87	0E31	202	B	TRVI GO TEST FOR RVI
			203		
0C5C	06 50	122A 16E9	204	WRTPRP	EGU * ADD 1 TO SELECT COUNT
0C62	0C 90	1445 1531	205	AZ	SLPC(6),DEC1(1) MOVE IN WRITE OR ERASE/WRITE
0C68	3C 60	1409	206	MVC	WRTFLD(1),WRTCMD SET DISPLAY NO AID CHAR
0C6C	3B 08	1445	207	MVI	EXP2-2,X'60' RESET THE START PRINT IN WCC
0C70	B8 08	04	208	SBF	WCC,X'08' TEST FOR THIS DEVICE A PRINTER
0C73	F2 90	13	209	TP1	TBN 4(XR2),*-# JUMP IF NOT
0C76	3C E8	1409	210	JF	WRTPAT SET PRINTER NO AID CHARACTER
0C7A	3D 00	1530	211	MVI	EXP2-2,X'E8' TEST FOR NOT PRINTING
0C7E	F2 81	08	212	CLI	PFLG,0 JUMP IF NOT PRINTING
0C81	3A 08	1446	213	JE	WRTPAT
0C85	3C F5	1445	214	SBN	WCC,X'08' SET THE START PRINT BIT IN WCC
0C89	C0 87	0E23	215	MVI	WRTFLD,X'F5' FORCE AN ERASE/WRITE TO PRINTER
0C8D	0035		216	WRTPAT	B DOSIO GO WRITE THE PATTERN
0C8F	1640		217	DC	AL2(EWRT-WRT)
0C91	1478		218	DC	AL2(XMITE)
			219	DC	AL2(EWRT)
			220		
0C93	4D 01	01 154A	221	CLC	1(2,XR1),ACK1 TEST FOR RESPONSE ACK 1
0C98	C0 81	0C40	222	BE	READ GO READ IF SO
0C9C	C0 87	0E31	223	B	TRVI GO TEST RVI, EOT OR WACK IF NOT
			224		
0CA0	06 50	11FC 16E9	225	READ	EGU * ADD 1 TO WRITE COUNT
0CA6	C0 87	0023	226	AZ	WRPC(6),DEC1(1) GO DO THE READ MODIFIED
0CAA	0003		227	B	DOSIO
0CAC	1640		228	DC	AL2(RDMODE-RDMOD)
0CAE	14FC		229	DC	AL2(XMITE)
			230	DC	AL2(RDMODE)
			231		
0CB0	7D E8	03	232	CLI	3(XR1),X'E8' DID WE GET A PRINTER AID?
0CB3	F2 01	07	233	JNE	NOPAS1 JUMP IF NOT
0CB6	BA 00	04	234	SP1	SBN 4(XR2),*-# SET PRINTER FLAG FOR THIS DEVICE
0CB9	3C E8	1409	235	MVI	EXP2-2,X'E8' SET EXPECTED AID FOR PRINTER
0CB0	0D 40	1640 1442	236	NOPAS1	CLC XMITE(65),EXP7 TEST CORRECT RESPONSE
0CC3	F2 81	11	237	JE	ACKIT JUMP IF CORRECT
0CC6	4D 01	01 1542	238	CLC	1(2,XR1),EOT WAS RESPONSE AN EOT?
0CCB	C0 81	0E5A	239	BE	REOT BRANCH OUT IF SO
0CCF	3C 08	1533	240	MVI	ERR,8 SET INCORRECT DATA CODE
0CD3	C0 87	0F84	241	B	ERROR
			242		
0CD7	06 50	1213 16E9	243	ACKIT	EGU * ADD 1 TO READ COUNT
0CDD	C0 87	0E75	244	AZ	RDP(6),DEC1(1) SEND ACK 1 TO DEVICE
0CE1	C0 87	0B01	245	B	GOACK GO TO NEXT DEVICE
			246		
			247		
			248	MICNL	MVI ERR,X'0F' SET ERROR CODE
0CE5	3C 0F	1533	249	SIO	X'80',SIO1 RESET ATTACHMENT CHECK
0CE9	F3 58	80	250	B	ERROR
0CEC	C0 87	0F84	251	B	*****
			252	*	MANUAL INTERVENTION ROUTINES *****
			253	*	*****
			254		
0CF0	C0 87	0D23	255	MANIN	B DOSIO GO WRITE PATTERN
0CFA	0039		256	DC	AL2(MANPIE-MANPI5)
0CF6	1640		257	DC	AL2(XMITE)
0CF8	14B2		258	DC	AL2(MANPIE)
			259		
0CFA	4D 01	01 154A	260	CLC	1(2,XR1),ACK1 CHECK FOR ACK 1 RETURN
0CFF	C0 81	0B01	261	BE	UPDATE BKAY IF SO, LEAVE HIM TO PLAY
0D03	C0 87	0E31	262	B	TRVI GO CHECK WHAT HAPPENED IF NOT
			263		
			264	MANIN1	MVC RECM56,28(20,XR1) MOVE IN MESSAGE
0D07	1C 13	14DA 1C	265	B	DOSIO GO ADD TO SCREEN
0D0C	C0 87	0D23	266	DC	AL2(MAN2E-MAN25)
0D10	093C		267	DC	AL2(XMITE)
0D12	1640				



89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

0D14 14EF 0015 268 DC AL2(MANP2E)  
269  
0D16 4D 01 01 164A 270 CLC 1(2,XR1).ACK1  
0D1B C0 81 0B01 271 BE UPDATE  
0D1F C0 87 0E31 272 B TRVI

CHECK FOR ACK 1 RETURN  
OKAY IF SO, LEAVE HIM TIL PF3 HIT  
GO CHECK WHAT HAPPEND IF NOT

89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

274 \*\*\*\*\*  
275 \* DO SID SUBROUTINE \*\*\*\*\*  
276 \*\*\*\*\*  
277  
278 DOSIO ST DOSIOR+3.ARR STORE RETURN ADDRESS  
279 ST REST2+3.XR2 STORE XR2  
280 L DOSIOR+3.XR1 POINT XR1 AT PARAMETERS  
281 MVC LOGMSG(20).MSGBLK BLANK OUT THE MESSAGE FIELD  
282 MVC LOGDEV(2).DEVICE INSERT THE DEVICE IN MESSAGE  
283 MVC LOGMSG(8).NOERR MOVE IN NO ERROR MESSAGE  
284 MVC LOGST(4).XXXX 'X' OUT DATA  
285 MVC LOGCAR(4).XXXX  
286 MVC LOGTAR(4).XXXX  
287 MVC LOGSAR(4).XXXX  
288 MVC LTAR(2).LCAR PUT INITIAL CAR INTO TAR LOAD AREA  
289 ALC LTAR,1(2,XR1) ADD IN THE DISPLACEMENT  
290 ALC LTAR(2).ONE ADD 1 MORE  
291 MVC LSAR,3(2,XR1) MOVE IN THE SAR ADDRESS  
292 LA XMITRC.XR2 PUT ADDR OF TRANSMIT/RECEIVE FIELD  
293 \* INTO XR2  
294 MVC MVDATA+4.5(2,XR1) MOVE IN DATA ADDRESS  
295 MVC MVDATA+1.1(1,XR1) MOVE IN THE LENGTH  
296 MVC MVDATA+2.1(1,XR1) MOVE IN THE DISPLACEMENT  
297 MVC FILL-1(65).FILL ZERO THE WHOLE XMIT/RECEIVE FIELD  
298 MVDATA MVC \*\*(\*\*,XR2).\*-\* MOVE XMIT DATA TO XMIT/REC. FIELD  
299 MVI BCNT-1,X'CO' RESET THE BUSY COUNTER  
300 MVI INTFLG.X'FF' SET INT FLG TO 'NO INTERRUPT'  
301 MVI ERR.0 SET ERROR FLAG TO ZERO  
302 SID ENINTR.CNTRL SID TO ENABLE INTERRUPTS TO CATCH  
303 \* ANY ATTACHMENT CHECKS  
304 LIO LCAR.CAR LOAD THE CAR  
305 LIO LTAR.TAR LOAD THE TAR  
306 LIO LSAR.SAR LOAD THE SAR  
307 TSTRDY TIO DROPEO,NOTRDY CHECK MICROCONTROLLER STILL RUNNING  
308  
309 SID ENINTR.XMITR SID TO TRANSMIT/REC., ENABLE INTR.  
310  
311 BUSYB TIO EXIT,BUSY TEST BUSY, MAYBE GO TO SUPERVISOR  
312 SNS SCAR.CAR SENSE THE CAR  
313 SNS STAR.TAR SENSE THE TAR  
314 SNS SSAR.SAR SENSE THE SAR  
315 SNS SSTAT.STATUS SENSE THE STATUS  
316 L LTAR.XR1 POINT XR1 TO RECEIVE FIELD  
317 CLI INTFLG.0 DID THE INTERRUPT OCCUR YET?  
318 JE TSTERR JUMP IF SO  
319 MVI ERR.X'0F' SET NO INTERRUPT ERROR  
320 TSTERR CLI ERR.0 TEST FOR NO ERROR  
321 BNE ERROR BRANCH IF ERROR OCCURRED  
322 CLI PREF.X'89' TEST FOR RUNNING ALONE  
323 BNE SUPER GO TO SUPERVISOR IF NOT  
324 ALC DOSIOR+3(2).SIX UPDATE RETURN ADDRESS  
325 REST2 LA \*-\*.XR2 RESTORE XR2  
326 DOSIOR B \*-\* RETURN TO USER  
327  
328 EXIT ALC BCNT(2).ONE ADD TO BUSY COUNTER  
329 BQL ESYERR ERROR AFTER ABOUT 1 SEC.  
330 CLI INTFLG.0 DID AN INTERRUPT OCCUR YET?  
331 JE GOTIT JUMP IF SO  
332 GOSUPR CLI PREF.X'89' TEST FOR 89F THE ONLY MODULE  
333 ENE SUPER RETURN TO SUPERVISOR IF NOT  
334 B BUSYB RETURN TO TEST STILL BUSY  
335  
336 BSYERR MVI ERR.X'02' SET BUSY TOO LONG INDICATED  
337 B ERROR GO TO ERROR ROUTINE  
338  
339 DROPEO CLI ERR.0 DID AN ERROR OCCUR  
340 BNE ERROR IF SO. GO TO ERROR ROUT.

09F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0E1D	3C 0A 1533	341	MVI	ERR,X'0A'	SET ATTACH. NOT READY ERROR
0E21	C0 87 0F84	342	B	ERROR	
		343			
0E25	3D 00 1533	344	GOTIT	CLI	ERR,0
CE29	C0 81 0E81	345	BE	GOSUPR	DID AN ERROR OCCUR YET?
CE2D	C0 87 0F84	346	B	ERROR	IF NOT, GO ON GO TO ERROR

09F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		348			*****
		349			* TEST RVI, WACK OR EOT RESPONSE SUBROUTINE *****
		350			*****
		351			
0E31	34 06 0E74	352	TRVI	ST	TRVIR+3,ARR
0E35	4D 01 01 1544	353	CLC	1(2,XR1),WACK	STORE RETURN ADDRESS
0E3A	C0 81 0B01	354	BE	UPDATE	TEST FOR WACK REC'D
0E3E	4D 01 01 1546	355	CLC	1(2,XR1),RVI	IF SO, GO TO NEXT DEVICE
0E43	F2 81 18	356	JE	RRVI	HAS RESPONSE RVI?
0E46	4D 01 01 1542	357	CLC	1(2,XR1),EOT	JUMP IF SO
0E48	F2 81 0C	358	JE	REOT	TEST FOR EOT REC'D
		359			JUMP IF SO
0E4E	3C 04 1533	360	MVI	ERR,4	SET UNEXPECTED RESPONSE
0E52	C0 87 0F84	361	B	ERROR	
0E56	C0 87 0B01	362	B	UPDATE	GO TO NEXT DEVICE
		363			
0E5A	3C 10 1533	364	RECT	MVI	ERR,X'10'
0E5E	F2 87 04	365	J	COP51	SET ERROR CODE
		366			GO TO ERROR, POLL & UPDATE
0E61	3C 20 1533	367	RRVI	MVI	ERR,X'20'
0E65	C0 87 0F84	368	COP51	B	ERROR
0E69	C0 87 0E9B	369	B	DOPOL	SET THE ERROR CODE
0E6D	C0 87 0B01	370	B	UPDATE	GO GET THE STATUS
		371			GO TO NEXT DEVICE
0E71	C0 87 0000	372	TRVIR	B	*-*
		373			RETURN TO USER
		374			*****
		375			* SEND ACK 1 SUBROUTINE *****
		376			*****
		377			
0E75	34 08 0E9A	378	GOACK	ST	GOACKR+3,ARR
0E79	C0 87 0D23	379	B	COSIO	STORE RETURN ADDRESS
0E7D	0001	0E7E	380	DC	AL2(ACK1-ACK1+1)
0E7F	164C	0E80	381	DC	AL2(XMITE)
0E81	154A	0E82	382	DC	AL2(ACK1)
		383			
0E83	4D 01 01 1542	384	CLC	1(2,XR1),EOT	TEST RESPONSE = EOT
0E88	F2 81 0C	385	JE	GOACKR	EXIT IF SO, ALL OKAY
0E8B	3C 04 1533	386	MVI	ERR,4	SET UNEXPECTED RESPONSE
0E8F	C0 87 0F84	387	B	ERROR	
0E93	C0 87 0B01	388	B	UPDATE	GO TO NEXT DEVICE
		389			
0E97	C0 87 0000	390	GOACKR	E	*-*
					RETURN TO USER

89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

392 *****
393 * DO POLL SUBROUTINE *****
394 *****
395
OE9B 34 08 0F67      396 DOPOL ST  DOPOLR+3,ARR      STORE RETURN ADDRESS
OE9F 0C 01 14F5 155C 397 MVC      SFPLD(2),POLL      SET UP TO POLL
OEAS 0C 01 14F7 1564 398 MVC      PSDEV(2),CURDEV     SET UP THE DEVICE
OEAB 0E 01 1517 1526 399 RPTPOL  ALC  DVBCNT(2),ONE     ADD TO DEVICE BUSY COUNTER
OEB1 38 20 1516      400 TBN      DVBCNT-1,X*20      TEST APPROX 20 SEC GONE BY
CEB5 F2 10 80        401 JT       CVBSY              IF SO, DEVICE IS HUNG BUSY
OEB8 06 70 1241 16E9 402 AZ      PLPC(8),DEC1(1)     ADD 1 TO POLL COUNT
403
OE8E C0 87 0D23      404 B        D0S10              GO TO I/O SUBROUTINE & POLL
OEC2 0008            OEC3 405 DC  AL2(ENG-SELPOL)     LENGTH OF MESSAGE
OEC4 1640            OEC5 406 DC  AL2(XMITE)           STOP ADDR
OEC6 14F8            OEC7 407 DC  AL2(ENG)           MESSAGE ADDR
408
OEC8 7D 37 00        409 CLI     0(,XR1),X*37      TEST FOR RESPONSE = EOT
OECB F2 81 96        410 JNE     DOPOLR            DEVICE OKAY IF SO, RETURN TO USER
OECE 4D 02 02 1555   411 CLC     2(3,XR1),STATR   TEST FOR STATUS RESPONSE
OED3 F2 01 55        412 JNE     TAID             GO TEST FOR AID IF NOT
OED6 4D 01 07 1540   413 CLC     7(2,XR1),IR    TEST RESPONSE # INT. REQ.
OED8 F2 01 1C        414 JNE     TSTDE           IF NOT GO TEST FOR DEVICE END
OEDE 88 00 00        415 T1    TBN  0(,XR2),*--  TEST LINE FORMERLY AVAILABLE
OEE1 C0 90 0B01      416 BF     UPDATE          IF NOT GO UPDATE TO NEXT DEVICE
OEE5 88 00 00        417 SBF   0(,XR2),*--     RESET THE ON BIT
OEE8 0C 00 1533 1564 418 MVC     ERR(1),CURDEV    PUT DEVICE IN ERROR CODE
OEEE C0 87 0F84      419 OOPS  B      ERROR
OEF2 C0 87 0E75      420 B      GOACK            GO ACKNOWLEDGE STATUS
OEF6 C0 87 0B01      421 B      UPDATE          GO TO NEXT DEVICE
422
OEFA 4D 01 07 164E   423 TSTDE  CLC  7(2,XR1),DE  TEST FOR DEVICE END STATUS
OEFF F2 01 06        424 JNE     TSTBY           IF NOT GO TEST BUSY
OF02 8A 00 00        425 SN1    SBN  0(,XR2),*--  SET THE AVAILABLE BIT ON
OF05 F2 87 58        426 J      SACK            GO ACKNOWLEDGE STATUS & RETURN
OF08 4D 01 07 1552   427 TSTBY CLC  7(2,XR1),DB  WAS THE DEVICE BUSY?
OF0D C0 81 0EAB      428 BE     RPTPOL          IF SO, GO POLL AGAIN
OF11 4D 01 07 1550   429 CLC     7(2,XR1),CC    TEST FOR CONTROL CHECK
OF16 C0 81 0EE5      430 BE     SF1             IF SO, GO SET LINE UNAVAILABLE
OF1A 4D 01 07 154C   431 CLC     7(2,XR1),IRCE  TEST FOR IR, DE
OF1F C0 81 0EE5      432 BE     SF1             IF SO, GO SET LINE UNAVAILABLE
OF23 3C 04 1533      433 WHAT  NVI  ERR,4       SET UP UNEXPECTED RESPONSE
OF27 C0 87 0EEE      434 B      OOPS            GO TO ERROR ROUTINE
435
OF28 4D 02 02 140B   436 TAID   CLC  2(3,XR1),EXP1  TEST FOR AID KEY DEPRESSED
OF30 F2 01 41        437 JNE     TTSTR           IF NOT, CHECK TEST REQ.
OF33 7D 6C 03        438 CLI     3(,XR1),X*6C    TEST FOR PA 1 KEY
OF36 F2 01 04        439 JNE     TPF2           JUMP IF NOT
OF39 3C FF 1530      440 NVI    PFLG,X*FF      SET PRINT FLAG ON
OF3D 7D 6E 03        441 TPF2   CLI  3(,XR1),X*6E    TEST FOR PA 2 KEY
OF40 F2 01 04        442 JNE     TENT           JUMP IF NOT
OF43 3C 00 1530      443 NVI    PFLG,0         RESET PRINT FLAG IF SO
OF47 7D 7D 03        444 TENT   CLI  3(,XR1),X*7D    WAS ENTER KEY PUSHED?
OF4A F2 01 0A        445 JNE     TCLR           JUMP IF NOT
OF4D 88 00 08        446 T1     TBN  8(,XR2),*--  TEST MAN. INT. ON THIS DEV.
OF50 C0 10 0D07      447 BT     MANIN1         GO TO MANUAL INT. ROUT. IF SO
OF54 F2 87 09        448 J      SACK            IF NOT, SEND ACK
OF57 7D 8D 03        449 TCLR   CLI  3(,XR1),X*6D    TEST FOR CLEAR
OF5A F2 01 03        450 JNE     SACK           JUMP IF NOT
OF5D 88 00 08        451 SBF   8(,XR2),*--     RESET MANUAL INT. BIT
OF60 C0 87 0E75      452 SACK   B      GOACK            GO SEND ACK
453
OF64 C0 87 0000      454 DOPOLR B  *--          RETURN TO USER
455
OF68 3C 09 1533      456 DVBSY  NVI  ERR,9       SET DEVICE HUNG BUSY
OF6C C0 87 0F84      457 B      ERROR
OF70 C0 87 0B01      458 B      UPDATE GO TO NEXT DEVICE

```

89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

OF74 4D 02 02 1558   459 TTSTR  CLC  2(3,XR1),TSTREQ  TEST FOR TEST REQUEST PUSHED
OF79 C0 01 0F23      460 BNE     WHAT            BRANCH IF NOT
OF7D 8A 00 08        461 SN2    SBN  8(,XR2),*--  SET MANUAL INT. FLAG ON THIS DEVICE
OF80 C0 87 0CF0      462 B      MANIN           GO TO MANUAL INTERVENTION ROUTINE

```

09F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

464 *****
465 * ERROR FORMATTING & PRINTOUT ROUTINE *****
466 *****
467
0F04 34 08 1188 468 ERROR ST ERRORR+3,ARR STORE RETURN
0F08 0C 01 132A 13C2 469 MVC EARLY(2),PPFF INITIALIZE FOR NO EXP. PRINTOUT
0F0E 0C 00 1137 1533 47C MVC ERRHLT(1),ERR FILL IN HALT CODE
0F94 3D 01 1533 471 CLI ERR,1 TEST FOR UNIT CHECK
0F98 F2 01 09 472 JNE TERR2
0F98 0C 11 1262 15D1 473 MVC LOGMSG(18),UNITMR INSERT UNIT CHECK MESSAGE
0FA1 F2 87 E0 474 J GETSET
0FA4 3D 02 1533 475 TERR2 CLI ERR,2 TEST FOR HUNG BUSY
0FAB F2 01 09 476 JNE TERR3
0FAB 0C 10 1262 1670 477 MVC LOGMSG(17),HMBUSY INSERT HUNG BUSY MESSAGE
0FB1 F2 87 D0 478 J GETSET
0FB4 3D 03 1533 479 TERR3 CLI ERR,3 TEST FOR INT PND ERROR
0FB8 F2 01 09 480 JNE TERR4
0FB8 0C 0D 1262 168F 481 MVC LOGMSG(14),INTPND INSERT INT PND ERROR MSG
0FC1 F2 87 C0 482 J GETSET
0FC4 3D 04 1533 483 TERR4 CLI ERR,4 TEST FOR UNEXPECTED STATUS
0FCB F2 01 09 484 JNE TERR5 JUMP IF NOT
0FCB 0C 12 1262 1682 485 MVC LOGMSG(19),UNEXP MOVE IN MESSAGE
0FD1 F2 87 B0 486 J GETSET
0FDA 3D 05 1533 487 TERR5 CLI ERR,5 TEST FOR ATTACHMENT CHECK
0FD8 F2 01 09 488 JNE TERR6
0FD8 0C 0F 1262 16E1 489 MVC LOGMSG(16),ATTMSG INSERT ATT CHECK MESSAGE
CFE1 F2 87 A0 490 J GETSET
0FE4 3D 06 1533 491 TERR6 CLI ERR,6 TEST FOR ITS ERROR
0FE8 F2 01 09 492 JNE TERR7
0FE8 0C 0C 1262 15FE 493 MVC LOGMSG(13),ITBMSG INSERT ITS ERROR MESSAGE
OFF1 F2 87 90 494 J GETSET
OFF4 3D 07 1533 495 TERR7 CLI ERR,7 TEST FOR NO INTERRUPT
OFF8 F2 01 09 496 JNE TERR8
OFF8 0C 0B 1262 15F1 497 MVC LOGMSG(12),NOINTR INSERT NO INTERRUPT MESSAGE
1001 F2 87 80 498 J GETSET
1004 3D 08 1533 499 TERR8 CLI ERR,8 TEST FOR DATA MISCMPARE
1008 F2 01 0F 500 JNE TERR9
1008 0C 0E 1262 167F 501 MVC LOGMSG(15),MISDAT INSERT MISCOMPARE MESSAGE
1011 0C 01 132A 155A 502 MVC EARLY(2),H0045 INSERT CONSTANT TO CAUSE EXP DATA TO PRINT
503 *
1017 F2 87 6A 504 J GETSET
101A 3D 09 1533 505 TERR9 CLI ERR,9 TEST FOR DEVICE HUNG BUSY
101E F2 01 09 506 JNE TERR0A JUMP IF NOT
1021 0C 0D 1262 1687 507 MVC LOGMSG(14),DVBMSG MOVE IN DEVICE BUSY MESSAGE
1027 F2 87 5A 508 J GETSET
102A 3D 0A 1533 509 TERR0A CLI ERR,X*0A* TEST FOR ATTACH. NOT READY
102E F2 01 09 510 JNE TERR0B JUMP IF NOT
1031 0C 10 1262 158F 511 MVC LOGMSG(17),ATTNDR MOVE IN MESSAGE
1037 F2 87 4A 512 J GETSET
103A 3D 0B 1533 513 TERR0B CLI ERR,X*0B* TEST FOR UNEXPECTED INTERRUPT
103E F2 01 09 514 JNE TERR0F JUMP IF NOT
1041 0C 13 1262 16D3 515 MVC LOGMSG(20),UNKINT MOVE IN MESSAGE
1047 F2 87 3A 516 J GETSET
104A 3D 0F 1533 517 TERR0F CLI ERR,X*0F* TEST MICRO CODE NOT LOADED
104E F2 01 09 518 JNE TERR20
1051 0C 14 1262 16E8 519 MVC LOGMSG(21),PICLNK MOVE IN MESSAGE
1057 F2 87 2A 520 J GETSET
105A 3D 20 1533 521 TERR20 CLI ERR,X*20* TEST FOR RVI TO SELECT
105E F2 01 09 522 JNE TERR40 JUMP IF NOT
1061 0C 0C 1262 165F 523 MVC LOGMSG(13),RVINSG MOVE IN MESSAGE
1067 F2 87 1A 524 J GETSET
106A 3D 10 1533 525 TERR40 CLI ERR,X*10* TEST FOR EOT TO CND
106E F2 01 09 526 JNE TERR40 JUMP IF NOT
1071 0C 09 1262 16A9 527 MVC LOGMSG(10),EOTMSG MOVE IN MESSAGE
1077 F2 87 0A 528 J GETSET
107A 3B 80 1137 529 DEV SBF ERRHLT,X*80* CHANGE HI CODE FROM C OR D TO 4 OR 5
107E 0C 13 1262 15E5 530 MVC LOGMSG(20),NDTAVL INSERT NOT AVAILABLE MESSAGE
531

```

09F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

1084 C0 87 021E 532 GETSET B UNPACK GO UNPACK CAR
1088 02 1086 533 DC IL1*2*
1089 1523 108A 534 DC AL2(SCAR)
108B 127C 108C 535 DC AL2(LGCR)
536
108D C0 87 021E 537 B UNPACK GO UNPACK TAR
1091 02 1091 538 DC IL1*2*
1092 1525 1093 539 DC AL2(STAR)
1094 1286 1095 540 DC AL2(LOGTAR)
541
1096 C0 87 021E 542 B UNPACK GO UNPACK SAR
109A 02 109A 543 DC IL1*2*
109B 1527 109C 544 DC AL2(SSAR)
109D 1290 109E 545 DC AL2(LOGSAR)
546
109F C0 87 021E 547 B UNPACK GO UNPACK STATUS
10A3 02 10A3 548 DC IL1*2*
10A4 1529 10A5 549 DC AL2(SSTAT)
10A6 1272 10A7 550 DC AL2(LOGST)
551
10A8 C0 87 021E 552 B UNPACK GO UNPACK 1ST HALF XMIT/REC
10AC 1E 10AC 553 DC IL1*30*
10AD 161D 10AE 554 DC AL2(XMITE-35)
10AF 12D7 10B0 555 DC AL2(LOGXR1)
556
10B1 C0 87 021E 557 B UNPACK GO UNPACK 2ND HALF XMIT/REC
10B5 23 10B5 558 DC IL1*35*
10B6 1640 10B7 559 DC AL2(XMITE)
10B8 1328 10B9 560 DC AL2(LOGXR2)
561
10BA C0 87 021E 562 B UNPACK GO UNPACK 1ST HALF EXP. FIELD
10BE 1E 10BE 563 DC IL1*30*
10BF 141F 10C0 564 DC AL2(EXP7-35)
10C1 136F 10C2 565 DC AL2(LOGEX3)
566
10C3 C0 87 021E 567 B UNPACK GO UNPACK 2ND HALF EXP. FIELD
10C7 23 10C7 568 DC IL1*35*
10C8 1442 10C9 569 DC AL2(EXP7)
10CA 13C0 10CB 570 DC AL2(LCGEX2)
571
10CC 3D 89 0A00 572 CLI PRPF,X*89* TEST RUNNING WITH SUPERVISOR
10DD F2 01 5F 573 JNE STOPIT JUMP UNLESS STAND ALONE
574
10D3 0C 00 10E2 1533 575 MVC HEAD(1),ERR MOVE ERROR TO HEADER
10D9 C0 87 021A 576 B PRINT GO PRINT 1ST MESSAGE
10DD C2 10DD 577 DC XL1*C2*
10DE 20 10DE 578 DC IL1*32*
10DF 1263 10E0 579 DC AL2(MSGBLK)
10E1 0900 10E2 580 HEAD DC XL2*8900*
10E3 C0 87 021A 581 B PRINT PRINT WRITE COUNT
10E7 81 10E7 582 DC XL1*81*
10E8 15 10E8 583 DC IL1*21*
10E9 11FC 10EA 584 DC AL2(WRPC)
10EB C0 87 021A 585 B PRINT PRINT READ COUNT
10EF 81 10EF 586 DC XL1*81*
10F0 15 10F0 587 DC IL1*21*
10F1 1213 10F2 588 DC AL2(RDPC)
10F3 C0 87 021A 589 B PRINT PRINT SELECT COUNT
10F7 81 10F7 590 DC XL1*81*
10F8 15 10F8 591 DC IL1*21*
10F9 122A 10FA 592 DC AL2(SLPC)
10FB C0 87 021A 593 B PRINT PRINT POLL COUNT
10FF 82 10FF 594 DC XL1*82*
1100 15 1100 595 DC IL1*21*
1101 1241 1102 596 DC AL2(PLPC)
1103 C0 87 021A 597 B PRINT GO PRINT CAR, TAR, SAR & STATUS
1107 82 1107 598 DC XL1*82*
1108 28 1108 599 DC IL1*43*

```

## 89F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
1109	1290	110A	600	DC	AL2(LOGSAR)
1109	C0 87 021A		601	B	PRINT
110F	81	110F	602	DC	XL1'81'
1110	45	1110	603	DC	IL1'69'
1111	12D7	1112	604	DC	AL2(LOGKR1)
1113	C0 87 021A		605	B	PRINT
1117	86	1117	606	DC	XL1'88'
1118	4F	1118	607	DC	IL1'79'
1119	1320	111A	608	DC	AL2(LOGKR2)
			609		
1118	3D FF 132A		610	CLI	EARLY.X'FF'
111F	F2 81 10		611	JE	STOPIT
1122	C0 87 021A		612	B	PRINT
1126	81	1126	613	DC	XL1'81'
1127	45	1127	614	DC	IL1'69'
1128	136F	1129	615	DC	AL2(LOGEX1)
112A	C0 87 021A		616	B	PRINT
112E	86	112E	617	DC	XL1'86'
112F	4F	112F	618	DC	IL1'79'
1130	13C0	1131	619	DC	AL2(LOGEX2)
			620		
1132	C0 87 0222		621	STOPIT	B HALT
1136	8900	1137	622	ERRHLT	DC XL2'8900'
1138	3D 89 0A00		623	DROP	CLI PREF.X'89'
113C	C0 01 0A0A		624	BNE	SUPER
1140	3D 0F 1533		625	CLI	ERR.X'0F'
1144	C0 81 1138		626	BE	DROP
1148	3D 05 1533		627	CLI	ERR.S
114C	C0 81 0A14		628	BE	START
1150	3D 01 1533		629	CLI	ERR.1
1154	C0 81 0A14		630	BE	START
			631		
1158	C0 87 0000		632	ERRRRR	B *-*

GO PRINT XMIT/REC FIELD

TO PRINTING EXPECTED DATA  
JUNR IF NOT  
PRINT EXPECTED DATAGO HALT  
\*\*\*\*\*HALT CODE GETS FILLED IN\*\*\*\*\*  
TEST FOR STAND ALONE OPERATION  
RETURN TO SUPERVISOR IF NOT  
TEST FOR MICRO CODE NOT LOADED  
HANG IF SO. TIL LOADED  
TEST FOR ATTACHMENT CHECK  
RESTART IF SO  
TEST FOR NOT READY/UNIT CHECK  
RESTART IF SO

RETURN TO USER

## 89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

					634 *****
					635 * INTERRUPT ROUTINE *****
					636 *****
					637
115C	34 01 11A4		638	INT2	ST X1+3.XR1
1160	34 02 11A8		639	ST	X2+3.XR2
1164	34 04 1518		640	ST	PSR0.PSR
1168	35 04 1535		641	L	ZERR.PSR
116C	C1 8D 11C4		642	TSTAT	TID ERRATC.ATTCHK
1170	C1 89 118A		643	TID	GOON.X'89'
1174	38 20 0A0E		644	TBN	BSCA1-1.X'20'
1178	F2 10 07		645	JT	B1SCA
117B	3C 08 1533		646	NVI	ERR.X'08'
117F	F2 87 18		647	J	IEXIT
1182	36 04 1518		648	B1SCA	L PSR0.PSR
1186	35 A0 0D0D		649	L	ABSCA1.1ARR2
			650		
118A	C1 88 118A		651	GOON	TID UNITC.MORDUC
118E	C1 8C 1199		652	TID	I01.X'8C'
1192	3C 03 1533		653	NVI	ERR.X'03'
1196	F2 87 04		654	J	IEXIT
1199	C1 88 118C		655	I01	TID ITBER.X'88'
			656		
119D	3C 00 1513		657	IEXIT	NVI INTPLG.0
11A1	C2 01 0000		658	X1	LA *-*.XR1
11A5	C2 02 0000		659	X2	LA *-*.XR2
11A9	35 04 1518		660	L	PSR0.PSR
			661		
11AD	F3 88 01		662	SID	X'01'.CNTRL
11B0	C0 87 115C		663	B	INT2
			664		
			665	*	ERRORS
11B4	3C 01 1533		666	UNITC	NVI ERR.X'01'
11B8	C0 87 119D		667	B	IEXIT
11BC	3C 06 1533		668	ITBER	NVI ERR.X'06'
11C0	C0 87 119D		669	B	IEXIT
11C4	38 20 0A0E		670	ERRATC	TBN BSCA1-1.X'20'
11C8	F2 90 08		671	JF	SETATC
11CB	3D 05 1533		672	CLI	ERR.X'05'
11C	C0 81 1182		673	BE	B1SCA
			674	*	
11D3	3C 05 1533		675	SETATC	NVI ERR.X'05'
11D7	C0 87 119D		676	B	IEXIT

SAVE XR1  
SAVE XR2  
SAVE PSR  
INITIALIZE PSR TO ZERO  
TEST FOR ATTACHMENT CHECK  
TEST FOR DA OP END INTERRUPT  
TEST FOR BSCA-1 PRESENT  
JUMP IF SO  
SET UNEXPECTED INTERRUPT  
EXIT INTERRUPT  
RESTORE THE PSR  
GO TO BSCA-1 MODULETEST FOR UNIT CHECK  
TEST FOR INTERRUPT PENDING  
ERROR. INTERRUPT SHOULD BE PND.  
EXIT  
TEST FOR ITS INTERRUPTSET INTERRUPT OCCURRED INDICATION  
RESTORE XR1  
RESTORE XR2  
RESTORE PSRRESET THE INTERRUPT  
TAKE NEXT INTERRUPTSET UNIT CHECK  
EXIT  
SET ITS ERRORIS BSCA-1 INSTALLED?  
IF NOT. GO SET ATT. CHK.  
WAS ATT. CHK. ALREADY SET?  
IF SO. BSCA-1 MAY BE HOLDING US  
IN THE INTERRUPT LOOP.  
SET ATTACHMENT CHECK

89F1 DA SYSTEM TEST MODULE

89F1 DA SYSTEM TEST MODULE

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
678	*****				
679	* ERROR LOGOUT				
680	*****				
110B	8009	110B	681	LOG EQU *	
110D	C4C140D3D6C7D6E4	110C	682	DC XL2'8009'	
11E5	E3	11E5	683	DC CL9'DA LOGOUT'	
11E6	8015	11E7	684	DC XL2'8015'	
11E8	E6D9C9E3C940E3D6	11F6	685	WRIT DC CL15'WRITE TOTALS'	
11F0	E3C1D3E2404040		685		
11F7	F0F0F0F0F0F0	11FC	686	WRPC DC CL6'0'	WRITE PASS COUNT
11FD	8015	11FE	687	DC XL2'8015'	
11FF	D9C5C1C440E3D6E3	120D	688	RDTT DC CL15'READ TOTALS'	
1207	C1D3E240404040		688		
120E	F0F0F0F0F0F0	1213	689	RDPD DC DL6'0'	READ PASS COUNT
1214	8015	1215	690	DC XL2'8015'	
1216	E2C5D3C5C3E34E3	1224	691	SELT DC CL15'SELECT TOTALS'	
121E	D6E3C1D3E24040		691		
1225	F0F0F0F0F0F0	122A	692	SLFC DC DL6'0'	SELECT PASS COUNT
122B	8015	122C	693	DC XL2'8015'	
122D	D7D6D3D340E3D6E3	1239	694	POLT DC CL13'POLL TOTALS'	
1235	C1D3E24040		694		
123A	F0F0F0F0F0F0F0	1241	695	PLPC DC DL6'0'	POLL PASS COUNT
1242	8020	1243	696	DC XL2'8020'	
1244	C4C5E5C9C3C540E7	124C	697	LOGDEV DC CL9'DEVICE XX'	
124C	E7		697		
124D	4040404040404040	1262	698	LOGMSG DC 22CL1' *	
1255	4040404040404040		698		
125D	4040404040404040		698		
1263	40	1263	699	MSGBLK DC CL1' *	
1264	802B	1265	700	DC XL2'802B'	
1266	4040E2E3C1E3E4E2	1272	701	LOGST DC CL13' STATUS=XXXX'	
126E	7EE7E7E7E7		701		
1273	4040C3C1D97EE7E7	127C	702	LOGCAR DC CL10' CAR=XXXX'	
127B	E7E7		702		
127D	4040E3C1D97EE7E7	1286	703	LOGTAR DC CL10' TAR=XXXX'	
1285	E7E7		703		
1287	4040E2C1D97EE7E7	1290	704	LOGSAR DC CL10' SAR=XXXX'	
128F	E7E7		704		
			705		
1291	8045	1292	706	DC XL2'8045'	
1293	E7D4C9E361D9C5C3	129B	707	DC CL9'XMIT/REC=*	
129B	7E		707		
129C	4040404040404040	12D7	708	LOGXR1 DC 60CL1' *	
12A4	4040404040404040		708		
12AC	4040404040404040		708		
12B4	4040404040404040		708		
12BC	4040404040404040		708		
12C4	4040404040404040		708		
12CC	4040404040404040		708		
12D4	40404040		708		
12D8	804F	12D9	709	DC XL2'804F'	
12DA	4040404040404040	132B	710	LOGXR2 DC 79CL1' *	
12E2	4040404040404040		710		
12EA	4040404040404040		710		
12F2	4040404040404040		710		
12FA	4040404040404040		710		
1302	4040404040404040		710		
130A	4040404040404040		710		
1312	4040404040404040		710		
131A	4040404040404040		710		
1322	4040404040404040		710		
1329	8045	132A	711	EARLY DC XL2'8045'	
132B	C5E7D7C5C3E3C5C4	1333	712	DC CL9'EXPECTED=*	
1333	60		712		
1334	4040404040404040	136F	713	LOGEXJ DC 60CL1' *	
133C	4040404040404040		713		
1344	4040404040404040		713		

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
134C	4040404040404040		713		
1354	4040404040404040		713		
135C	4040404040404040		713		
1364	4040404040404040		713		
136C	40404040		713		
1370	804F	1371	714	DC XL2'804F'	
1372	4040404040404040	13C0	715	LOGEX2 DC 79CL1' *	
137A	4040404040404040		715		
1382	4040404040404040		715		
138A	4040404040404040		715		
1392	4040404040404040		715		
139A	4040404040404040		715		
13A2	4040404040404040		715		
13AA	4040404040404040		715		
13B2	4040404040404040		715		
13BA	4040404040404040		715		
13C1	FFFF	13C2	716	FFFF DC XL2'FFFF'	

89F1 DA SYSTEM TEST MODULE

Table with columns: ERR LOC OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Rows include DATA FIELDS AND CONSTANTS, DATAST EQU, EXPD AT EQU, etc. Includes statements like 'EXPECTED READ DATA' and 'WRITE MANUAL INT. PATTERN'.

89F1 DA SYSTEM TEST MODULE

Table with columns: ERR LOC OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Rows include SELPOL EQU, SPFLD DC, PSDEV DC, ENC DC, etc. Includes statements like 'SELECT/POLL MESSAGE' and 'KEEP THE FOLLOWING 2 BYTE FLAG BYTES TOGETHER AND IN ORDER'.

89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

1567	4040	1568	832	ATAB	DC	XL2'4040'
1569	40C1	156A	834		DC	XL2'40C1'
1568	4048	156C	835		DC	XL2'4048'
156D	40E8	156E	836		DC	XL2'40E8'
156F	40E9	1570	837		DC	XL2'40E9'
1571	40F3	1572	838		DC	XL2'40F3'
1573	C150	1574	839		DC	XL2'C150'
1575	C1D1	1576	840		DC	XL2'C1D1'
1577	C158	1578	841		DC	XL2'C158'
1579	C1F8	157A	842		DC	XL2'C1F8'
157B	C1F9	157C	843		DC	XL2'C1F9'
157D	C2C3	157E	844		DC	XL2'C2C3'
157F	C260	1580	845		DC	XL2'C260'
1581	C261	1582	846		DC	XL2'C261'
1583	C268	1584	847		DC	XL2'C268'
1585	C3C8	1586	848		DC	XL2'C3C8'
1587	C3C9	1588	849		DC	XL2'C3C9'
1589	C3D3	158A	850		DC	XL2'C3D3'
158B	C3F0	158C	851		DC	XL2'C3F0'
158D	C3F1	158E	852		DC	XL2'C3F1'
158F	C378	1590	853		DC	XL2'C378'
1591	C4D8	1592	854		DC	XL2'C4D8'
1593	C4D9	1594	855		DC	XL2'C4D9'
1595	C4E3	1596	856		DC	XL2'C4E3'
1597	C540	1598	857		DC	XL2'C540'
1599	C5C1	159A	858		DC	XL2'C5C1'
159B	C548	159C	859		DC	XL2'C548'
159D	C5E8	159E	860		DC	XL2'C5E8'
159F	C5E9	15A0	861		DC	XL2'C5E9'
15A1	C5F3	15A2	862		DC	XL2'C5F3'
15A3	C650	15A4	863		DC	XL2'C650'
15A5	C6D1	15A6	864		DC	XL2'C6D1'
15A7	C658	15A8	865		DC	XL2'C658'
15A9	C6F8	15AA	866		DC	XL2'C6F8'
15AB	C6F9	15AC	867		DC	XL2'C6F9'
15AD	C7C3	15AE	868	ETAB	DC	XL2'C7C3'
15AF	C1E3E3C1C3C84840	158F	869	ATTNOR	DC	CL17'ATTACH. NOT READY'
15B7	D5D6E340D9C5C1C4		869			
15B8	E8		869			
15C0	D5D6E340D9C4E861	15D1	870	UNITNR	DC	CL18'NOT RDY/UNIT CHECK'
15C8	E4D5C9E340C3C6C8		870			
15D0	C3D2		870			
15D2	C9D5E34840D9C5D8	15E5	871	NOTAVL	DC	CL20'INT. REQ./NOT AVAIL.'
15DA	4861D5D6E340C1E5		871			
15E2	C1C9D348		871			
15E6	D5D640C9D5E3C6D9	15F1	872	NCINTA	DC	CL12'NO INTERRUPT'
15EE	D9E4D7E3		872			
15F2	C9E3C240C9D5E340	15FE	873	ITBMSG	DC	CL13'ITB INT ERRDR'
15FA	C5D9D9D6D9		873			
			874			
1600			875	ORG		*.256.0
			876	XMITRC	EQU	*
1600		1640	877	WRITE	DS	65CL1
1641	00	1641	878	FILL	DC	XL1'0'
			879			
1642	C1E3E3C1C3C8D4C5	1651	880	ATBMSG	DC	CL16'ATTACHMENT CHECK'
164A	D5E340C3C8C8C3D2		880			
1652	C9D5E340D7D5C440	165F	881	INTPND	DC	CL14'INT PND NOT ON'
165A	D5D6E340D6D5		881			
1660	C1E3E3C1C3C84840	1670	882	HMBUSY	DC	CL17'ATTACH. HUNG BUSY'
1668	C8E4D5C740C2E4E2		882			
1670	E8		882			
1671	C4C1E3C140D4C9E2	167F	883	MISDAT	DC	CL15'DATA MISCOMPARE'
1679	C3D6D4C7C1D9C5		883			
1680	E4D5C5E7D7C5C3E3	1692	884	UNEMP	DC	CL19'UNEXPECTED RESPONSE'
1688	C5C440D9C5E2D7D6		884			
1690	D5E2C5		884			

89F1 DA SYSTEM TEST MODULE

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

1693	D9E5C940E3D64JE2	169F	885	RVMSG	DC	CL13'RV1 TO SELECT'
1698	C5D3C8C3E3		885			
16A0	C5D6E340E3D640C3	16A9	886	EOTMSG	DC	CL10'EOT TO CMD'
16A8	D4C4		886			
16AA	C4C8E54840C8E4D5	16B7	887	DVBMSG	DC	CL14'DEV. HUNG BUSY'
16B2	C740C2E4E2B8		887			
16B8	D5D640C5D9D9D6D9	16BF	888	NDERR	DC	CL5'NC ERROR'
16C0	E4D5C5E7D7C5C3E3	16D3	889	UNXINT	DC	CL20'UNEXPECTED INTERRUPT'
16C8	C5C440C9D5E3C5D9		889			
16D0	D9E4D7E3		889			
16D4	D4C9C3D9D640C3D6	16E8	890	MICNLM	DC	CL21'MICRO CODE NOT LOADED'
16DC	C4C840D5D6E340D3		890			
16E4	D6C1C4C5C4		890			
16E9	F1	16E9	891	DECI	DC	DL1'1'
16EA	E0	16EA	892	KATD1	DC	XL1'E0'
16EB	8A9A	16EC	893	KATD2	DC	XL2'8A9A'
		0A14	894	END		START

DECIMAL ONE  
REPLACEMENT KATAKANA RIPPLE CHAR.



09F1 DA SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
AATAB	A	002	152B	0799	0108 0159 0169
ABSCA1	C	001	0DFD	0018	0649
ABSCA2	C	001	0DFF	0C19	0103*
ACKIT	A	001	0CD7	0243	0237
ACKO	A	002	1548	0816	0200
ACK1	A	002	154A	0817	0221 0260 0270 0380 0380 0382
ADATA	A	002	14FE	0773	0137 0157
ADDOK	A	004	08E3	0170	0130 0147 0168
AETAB	A	002	152D	0800	0167
AINT2	A	002	1519	0790	0105 0109
ALONE	A	0C3	0A53	0106	0065 0164
ARR	C	001	0008	0022	0278 0352 0378 0386 0468
ATAB	A	002	1568	0833	0799
ATABPT	A	002	152F	0801	0108* 0158 0159 0166* 0167 0169*
ATTCHK	C	001	005D	0016	0056 0642
ATTMSG	A	016	1651	0680	0489
ATTNOR	A	017	158F	0669	0511
BCNT	A	002	1515	0788	0050* 0051 0055* 0299* 0328*
BSCA1	A	003	0A0F	0313	0644 0670
BSYERR	A	004	0E0D	0236	0329
BUSY	C	001	008A	0032	0311
BUSYB	A	004	0DAF	0311	0334
BISCA	A	004	1182	0648	0645 0673
CAR	C	001	008C	0028	0304* 0312
CC	A	002	1550	0620	0429
CNTRL	C	001	0088	0036	0106 0302 0662
CONS	A	002	0AC3	0197	0075
CURDEV	A	002	1504	0776	0100* 0114* 0118* 0119* 0120 C121 0123* 0124* 0131 0133* 0183 0187
					0398 0418
CURRA	A	002	1502	0775	0107* 0151 0154* 0155 0157*
DATAE	A	027	1401	0723	0068* 0069* 0774
DATAS1	A	001	13C3	0721	0773
DATEA	A	002	1500	0774	0155
DB	A	002	15E2	0221	0427
DE	A	002	154E	0819	0423
DEC1	A	001	16E9	0891	0205 0226 0244 0402
DEV	A	004	107A	0529	0526
DEVC2	A	002	153A	0809	
DEV02	A	002	153C	0810	
DEVICE	A	009	1455	0739	0184 0185 0186 0282
DEVINC	A	002	153E	0811	0114
DEVOK	A	004	086F	0143	0132
DOPOL	A	004	0E9B	0396	0190 0369
DOPOLR	A	004	0F64	0454	0396* 0410
DOSIO	A	004	0D23	0278	0195 0216 0227 0255 0265 0376 0404
DOSIOR	A	004	0DEC	0326	0278* 0280 0324*
DRDP	A	004	1138	0823	0626
DROPED	A	004	0E15	0339	0307
DVBcnt	A	002	1517	0789	0053* 0054* 0057* 0189 0189* 0399* 0400
DVBSG	A	014	1687	0887	0507
DVBSY	A	004	0F64	0456	0401
EARLY	A	002	132A	0711	0469* 0502* 0610
ENABLE	C	001	00C0	0335	0106
ENINTR	C	001	00D2	0334	0302 0309
ENO	A	001	14F8	0768	0196 0198 0405 0407
EOT	A	002	1542	0813	0238 0357 0384
EOTMSG	A	010	16A9	0686	0627
ERR	A	001	1533	0805	0240* 0248* 0301* 0319* 0320 0336* 0339 0341* 0344 0360* 0364* 0367* 0386* 0418* 0433* 0456* 0470 0471 0475 0475* 0483 0487 0491 0495 0499 0505 0509 0513 0517 0521 0525 0575 0625 0627 0629 0646* 0653* 0666* 0668* 0672 0675*
ERRATC	A	004	11C4	0670	0642
ERRMLT	A	002	1137	0622	0470* 0529*
ERRDR	A	004	0F84	0468	0241 0253 0321 0337 0340 0342 0346 0361 0368 0387 0419 0457
ERRDRR	A	004	1158	0632	0468*
ETAB	A	002	15AE	0668	0800

09F1 DA SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
EWRT	A	001	1478	0743	0217 0219
EXIT	A	006	00F0	0328	0311
EXPDAT	A	001	1402	0724	
EXP1	A	007	1408	0725	0187* 0436
EXP2	A	003	1406	0726	0163* 0207* 0211* 0235*
EXP3	A	003	140E	0727	0164*
EXP4	A	009	1417	0728	0185*
EXP5	A	003	141A	0729	0169*
EXP6	A	001	1437	0730	0152*
EXP7	A	010	1442	0732	0236 0664 0669
FFFF	A	002	13C2	0716	0469
FILL	A	001	1641	0878	0297 0297*
GETSET	A	004	1084	0532	0474 0478 0482 0485 0490 0494 0498 0504 0508 0512 0516 0520
					0524 0528
GO	A	004	0886	0151	0113 0135 0141
GOACK	A	004	0E75	0378	0245 0420 0452
GOACKR	A	004	0E57	0390	0378* 0385
GOON	A	004	118A	0651	0643
GOSUPR	A	004	0E01	0332	0345
GOTIT	A	004	0E2B	0344	0331
HALT	C	001	0222	0325	0621
MBUSV	A	017	1670	0882	0477
HEAD	A	002	10E2	0280	0575*
H8845	A	002	155A	0824	0502
IAR2	C	001	00A0	0024	0109* 0649*
IEXIT	A	004	119D	0657	0647 0654 0667 0669 0676
INTFLG	A	001	1513	0787	0300* 0317 0330 0657*
INTPND	A	014	165F	0881	0481
INT2	A	004	115C	0638	0663 0790
ID1	A	004	1199	0655	0652
IR	A	002	1540	0812	0413
IRDE	A	002	154C	0818	0431
ITBER	A	004	118C	0668	0655
ITBMSG	A	013	18FE	0473	0493
KATD1	A	001	16EA	0892	0068
KATD2	A	002	16EC	0893	0069
LCAR	A	002	1510	0792	0288 0304
LINE	A	002	1506	0777	0099* 0116 0125 0129* 0134* C143* 0144 0144* 0146 0146* 0170
LINES	A	003	0A0C	0012	0066 0097
LOG	A	001	11C8	0681	0011
LOGCAR	A	010	127C	0702	0285* 0535
LOGDEV	A	009	124C	0697	0186* 0282*
LOGEX1	A	001	136F	0713	0565 061E
LOGEX2	A	001	13C0	0715	0570 0619
LOGMSG	A	001	1262	0698	0281* 0283* 0473* 0477* 0481* 0485* 0489* 0493* 0497* 0501* 0507* 0511* 0515* 0519* 0523* 0527* 0530*
LOGSAR	A	010	1290	0704	0287* 054E 0600
LOGST	A	013	1272	0701	0284* 0550
LOGTAR	A	010	1286	0703	0286* 0540
LOGXR1	A	001	12D7	0708	0555 0604
LOGXR2	A	001	132B	0710	0560 0608
LSAR	A	002	1521	0794	0191* 0306
LTAR	A	002	181F	0793	0288* 0289* 0290* 0305 0316
MANFLG	A	004	1512	0785	
MANIN	A	004	0CF0	0255	0462
MANIN1	A	005	0D07	0264	0447
MANPIE	A	001	14B2	0753	0256 025E
MANP1S	A	001	1479	0745	0256
MANP2E	A	001	14EF	0763	0266 026E
MANP2S	A	001	14B3	0755	0266
NICLP	A	004	0A3D	0655	0058
NICNL	A	004	0CE5	0248	0052 005E
NICNLM	A	021	16E8	0890	0519
NICRON	A	004	0A48	0064	0063 0070
NISDAT	A	015	167F	0883	0501
NSGBLK	A	001	1263	0699	0281 0579

09F1 DA SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
MVDATA	A	005	0D88	0298	0294* 0295* 0296*
NEXT	A	004	0A7E	0078	0092
NOERR	A	008	168F	0888	0283
NOINTR	A	012	15F1	0872	0497
NOKAT	A	004	0A62	0C70	0067
NOPAS1	A	006	0C8D	0236	0233
NORDUC	C	001	0088	0637	0651
NORDY	A	003	0A42	0C60	
NOTAVL	A	020	15E5	0871	0530
NOTRDY	C	001	0058	0J15	0307
NOTST	A	005	08BA	0162	0160
ONE	A	003	1536	0806	0057 0093 0154 0290 0328 0399 0807
ONFLG	A	004	150A	0783	0073 0073* 0074* 0082* 0101 0135 0138
DDPS	A	004	0EEE	0419	0434
DDPS1	A	004	0E65	0368	0365
DPT3	C	001	0008	0038	
DPT4	C	001	0010	0039	
DPT5	C	001	0020	0040	
PASS1	A	001	1532	0E04	0064 0111 0112*
PFLC	A	001	1530	0E02	0140* 0212 0440* 0443*
PLPC	A	008	1241	0695	0402* 0596
POLL	A	002	155C	0825	0100 0132 0397
POLT	A	013	1239	0694	
PREF	C	001	0A00	0J41	0103 0322 0332 0572 0623
PRINT	C	001	021A	0026	0576 0581 0585 0589 0593 0597 0601 0605 0612 0616
PRFLG	A	004	150E	0784	0138
PSDEV	A	002	14F7	0767	0398*
PSR	C	001	0004	0023	0640 0641* 0648* 0660*
PSRW	A	002	151B	0791	0640* 0648 0660
RDMOD	A	001	14F9	0770	0228
RDMODE	A	004	14FC	0771	0228 0230
RDPAC	A	006	1213	0689	0244* 0588
RDTT	A	015	120D	0688	
READ	A	001	0CA0	0225	0222
RECM5G	A	001	14DA	0760	0264*
REOT	A	004	0E5A	0364	0239 035E
REST2	A	004	0DE8	0325	0279*
RIPDAT	A	001	1474	0741	0153*
RPTPOL	A	006	0EAB	0399	0428
RRVI	A	004	0E61	0367	0356
RTNC1	A	001	0A10	0J44	0010
RV1	A	002	1546	0815	0355
RVMSG	A	013	169F	0885	0523
SACK	A	004	0F60	0452	0426 0448 0450
SAR	C	001	0089	0J30	0306* 0314
SCAR	A	002	1523	0795	0312* 0534
SEL	A	002	155E	0826	0194
SELECT	A	006	0C40	0194	
SELPOL	A	001	14F0	0765	0196 0405
SELT	A	015	1224	0691	
SET	A	004	0AC1	0096	0071 0071* 0072* 0082 0083 0083* 0084 0084* 0085 0085* 0086
SETADR	A	004	0BA9	0158	0156
SETATC	A	004	1103	0675	0671
SETPOL	A	006	0C2F	0189	
SETTBN	A	003	0A82	0J79	0094
SF1	A	003	0E65	0417	0172* 0430 0432
SF2	A	003	0F5D	0451	0178*
SHIFT	A	004	0AA6	0C89	0090
SHIFTR	A	006	0B73	0144	0145
SIG1	C	001	0058	0C17	0048 0049 0050 0055 0060 0061 0249
SIX	A	002	1538	0808	0166 0324
SLPC	A	006	122A	0692	0205* 0592
SN1	A	003	0F02	0425	0173*
SN2	A	003	0F7D	0461	0176*
SPFLD	A	006	14F5	0766	0194* 0397*
SP1	A	003	0C86	0234	0175*

09F1 DA SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
SSAR	A	002	1527	0797	0314* 0544
SSAT	A	002	1529	0798	0315* 0545
STAR	A	002	1525	0796	0313* 0539
START	A	003	0A14	0048	0628 0630 0894
STATR	A	003	1555	0822	0411
STATUS	C	001	008B	0J31	0315
STOPT	A	004	1132	0621	0573 0611
SUPER	C	001	0A0A	0042	0323 0333 0624
SVXR2	A	002	1566	0829	0102* 0115 0128* 0136*
TAID	A	005	0F28	0436	0412
TALONE	A	004	0AC4	0099	0087
TAR	C	001	008A	0J29	0305* 0313
TCLR	A	003	0F57	0449	0445
TENT	A	003	0F47	0444	0442
TERR0A	A	004	102A	0509	0506
TERR0B	A	004	103A	0513	0510
TERR0F	A	004	104A	0517	0514
TERR2	A	004	0FA4	0475	0472
TERR20	A	004	105A	0521	0518
TERR3	A	004	0FB4	0479	0476
TERR4	A	004	0FC4	0483	0480
TERR40	A	004	106A	0525	0522
TERR5	A	004	0FD4	0487	0484
TERR6	A	004	0FE4	0491	0488
TERR7	A	004	0FF4	0495	0492
TERR8	A	004	1004	0499	0496
TERR9	A	004	101A	0505	0500
TLIN	A	004	0A85	0080	0075* 0076* 0078 0078* 0079* 0088* 0089 0089* 0091 0093*
TM1	A	003	0C39	0192	0177*
TM2	A	003	0F4B	0446	0179*
TPF2	A	003	0F3D	0441	0439
TP1	A	003	0C70	0209	0174*
TRVI	A	004	0E31	0352	0202 0223 0262 0272
TRVIR	A	004	0E71	0372	0352*
TSTAT	A	004	116C	0642	
TSTBY	A	005	0F08	0427	0424
TSTDE	A	005	0EFA	0423	0414
TSTERF	A	004	0DD2	0220	0318
TSTROY	A	004	0DA8	0307	
TSTREQ	A	003	1558	0823	0459
TTSTR	A	005	0F74	0459	0437
T1	A	003	0EDE	0415	0171*
T2	A	004	0B1A	0120	0117
T3	A	004	0B2D	0125	0122
T4	A	004	0B42	0131	0126
UNEXP	A	019	1692	0884	0485
UNITC	A	004	1184	0666	0651
UNITNR	A	018	15D1	0E70	0473
UNPACK	C	001	021E	0027	0181 0532 0537 0542 0547 0552 0557 0562 0567
UNXINT	A	020	16D3	0889	0515
UPDATE	A	006	0B01	0114	0193 0246 0261 0271 0354 0362 0370 0388 0416 0421 0458
UPL	A	004	0A91	0383	0081
WACK	A	002	1544	0814	0353
WCC	A	001	1446	0736	0208* 0214*
WHAT	A	004	0F23	0433	0460
WRPC	A	006	11FC	0686	0226* 0584
WRT	A	001	1443	0734	0217
WRTADR	A	003	1449	0737	0162*
WRTCND	A	001	1531	0803	0137* 0161* 0206
WRTFLD	A	003	1445	0735	0206* 0215*
WRTPAT	A	004	0C89	0216	0210 0213
WRTPRP	A	001	0C5C	0204	0201
WRTT	A	015	11F6	0685	
WVXK	A	001	0A00	0004	
XWHITE	A	001	1640	0877	0197 0218 0229 0236 0257 0267 0361 0406 0554 0559
XNITR	C	001	008A	0J33	0309

89F1 DA SYSTEM TEST MODULE

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
XMITRC	A	001	1600	0676	0292 0792
XR1	C	001	0001	0020	0063 0070* 0071 0071 0072 0075 0075 0076 0078 0078 0079 0082
					0083 0083 0084 0084 0085 0085 0086 0088 0089 0085 0091 0093
					0151* 0152 0153 0150* 0162 0163 0164 0165 0170* 0171 0172 0173
					0174 0175 0176 0177 0178 0179 0200 0221 0232 0238 0260 0264
					0270 0280* 0289 0291 0294 0295 0296 0314* 0353 0355 0357 0384
					0409 0411 0413 0423 0427 0429 0431 0436 0438 0441 0444 0449
					0459 0638 0658*
XR2	C	001	0002	0021	0101* 0102 0115* 0127 0127* 0128 0135* 0136 0192 0205 0234 0270
					0292* 0298 0325* 0415 0417 0425 0446 0451 0461 0639 0659*
KKXX	A	004	1562	0627	0284 0285 0286 0287
X1	A	004	11A1	0658	0630*
X2	A	004	11A5	0659	0639*
X7200	A	002	1564	0628	0651
ZERO	A	003	1535	0607	0641

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

89F1 DA SYSTEM TEST MODULE

OBJECT CARD LISTING

THE CHARACTER ' ' INDICATES A BLANK COLUMN AND THE CHARACTERS D E M INDICATE NUMERIC SHIFT.

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

GBK GBD PH 42 34260 EC 825032 89F DA SYSTEM TE ST \*\*\*\*\* 84888488 89000 0 \*\*\*\*\* 89F10000

T<EYIS-D \*\*\*\*\* B/ J6SV H E D \*\*\* 30HC3CK 00ANNCD NEJWUO DC9LOBEJ9 B-JNDCE- B8.12< /G6UG09 89F10001

T.02/EJPAPE3VC-D NE1M608 NK|0-|0 08C4 EL.2 R68 6V <02 <C M J8DC D LBASS 88\_HK+-F68 .BcMASK89F10002

T(6DP0-DNKEBCIPV 8CGU| 1NHESY88AN GP E :70M|NO |TS B+C48 \*\*\*\*\* 82 EG-< NBXV: 7V8P-(19 84 NC 8C:8N89F10003

T<0..INBCIPV8888 20888 TS: LB=08 HZX5 |X88X9+ M N(8EGETH \*\*\*\*\* 8-2 B-ANFC DNA 3.2X VMJOMZHE8F10004

T.C.FENSE /MGI H NRT618-C2-60< 67 =EJX35< < JNEE|8 < JNTEK15YANR|6 N<T3 \*\*\*\*\* MKNTG14 DEGRA=6-89F10005

T.-XDEL.2-0H+ JM CEL85 /NW+H NATH 8ECD 888:-AMC+ Y MACUEEL2U -8-AN D+8 \*\*\*\*\* XIKD|FJM +B--A3R<89F10006

T<\_SEL88 JMF82 +8-MAI HNRT2 888 2/:D\*P/NDB-DWC D NAANA|H NAKH8E8+ 4 /NN| TH2+THJY LCONAD8889F10007

T.0>.8JN1C88C/N HB-D:| |8N<|HGE30 8E8M+ JMF88 H 3C NA/N8BY|}8C N /G\* 8AWIE 8F/0 |E 08|E889F10008

T.->:8C+ 8ADN) + JNBELO( JNBE8C 2A 0< JNBE|8E JM 7CEDA.1N.8-CD|}8 NCJ0 .K8UMACED10 (800A:8889F10009

T.87Y JJI 80AE 8 8G 8NC-M+ J8EA 8 AEK8M 4AEK8N.-M DA-8AEK8N88AE80 + \*\*\*\*\* 8XK1J88FAC JC 8E8889F10010

T.000C\_8 G +9- + 8C 8D 8GD 8 <0 \* 8= 8D 8CY 8 |P- \* 8+ <8 6 /8A \*\*\*\*\* H88-F/M 8E08AE8889F10011

T. 1E888N80AE8+ N88GADU8N80 E - NA 8AEJ+NE888CZ> 8 T D 8AC 8M JA : 80D1/88FJMLC04 I80A:8889F10012

T.0150M+(NO 8EU N=8AA JN88YDD8M+ +<8R8C8YD:80 EDM NCL1-E U88A|F> \*\*\*\*\* 88Z L 8U8N888FJM +8C+CJ3-89F10013

T.82T|+M8LA 8LC 2-8-:8AJF||8NJB 8 6CK< (JR 8G/( 8C NK8BACHC /081AV J \*\*\*\*\* 84ZIKD8F/Q KC=8C888889F10014

T< 3NE>X /04T < 0CALB-:-CB-DG>- 0|+-NB85 EU N8TH AD8AA JN888D+DT0 MEL| /0 8MSQ:8A- .88N88889F10015

T.-4CC88F8N8LE>X /0650M+. LO|EL| 30HC /0=8D8M+(M0 9EL 8XU4A JN888C \*\*\*\*\* .KUMH/8ED88 .80N88889F10016

T.-42/0816A<M8/3 /04T C088AL?L8D AEM. -8X80H++<LE HC:84 -7.88C(800 LD8N .8Y8H/8EE/0 |80888889F10017

TH05:8M< JI<88N <A18E.8< 112E8M < 1188GHC 1HFE8M < 1F8E8M< JM-EJ4 H2U8H18)FJ8LD84 .80N88889F10018

T.08+8-8N80D+ JM -ELC8 JM/ 8HBE- + 86<AJ0 CQUAG (8-D<8AR 8UF< \*\*\*\*\* C3 Y18D+E1< +B--CL8889F10019

T.08=EJ88=1NL| NK=+H TF<EJ415/M <CUMH+80C/P38. AS-7C<N8M1888888 8EJ8X 88.12<+F8E 8EC8888889F10020

89F1 DA SYSTEM TEST MODULE

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T<-71<XKXHLMAEJ0	*ANLBYDDI<MNC34	EL E=D GUM<	AB-Y+ 57TELTB	DH* 8A B-WF/Q	KBO+COBND9F10021
T<85EJMN<B-C-A	*ANLBYDU GUM<	AB-./067  MNKCB	GCCE* AM30 C /CO	MEL  /0 >H5086/Y	.AD<A79899F10022
T<9LCE6* AN30MD	+*86C8E4B 94LE0	AEML -EXALEDAEM	2-J_ (GCMETMCCO	DEL  /0 >I18EE/D	(BEMASYT8F10023
T.O:CCBL /OXA A	N<MGAC0-EL  /O=	DGM+*W8B6CG /0	(-+*W8B6CK<< JR	EMZ( B8XMB8*FAG	8BENA*3 85F10024
T.-12 EDNETMACCO	DEL  /O=DOH+.*8	G**4E *XC DM*JN	*C DM*IMDC-DMEIM	6+8 80D156-6/Y	KC-YCIED89F10025
TCCFUEJSD. F+A1	AE>X /04T *-06AL	B-L+ 8YFOLSHBEMP	2 NN( 6ONE MAG.-	<BSBDD<K+>EAM	+E--A6189F10026
T<680>C C N<IM	DOH+ <86CNP /OX	AL8DGEN82 6E: C	2/5/( 6*MMXBACD_	( 6+NM< <B8XJ6	6C -FPAN89F10027
T<-1-6VLE8DGEN3	-6v  6NK8BGC>9	(-HME MAGPS2 *M	AAC2*ELA*8- 2 66	8 AMO*PAC BEVFAK	80*BND89F10028
T<0**8-DVD NOA	(A*H8BPS_*NA #2	*K8GCKP /0   U	N<8B8C8L /OZALE+	BENT 68T>- 2.SU	WHJUI-889F10029
T.-=X T /030(-	J00GAD2YL0-0 DL+	N<34AEL 2 6UKDI	SEI82/* /M3B-C	ICA ZMS REJK	CGUEIY+89F10030
T.O*+DWH0+H84C4	CEL 2 6UKCJISEV	2/8 *AAM3B-DICAH	KQ/EKBY;0 6NMK+	A8G0  *H5</F/<	JB-<AJ#DB89F10031
T.1 <DWHON<HYC4	FEL 2 6UKCAISE	2/9 *A1M3B-DIC 2	KC/F18Y;  6-N<M	AC00+ *H5</F/<	JB-<A#DB89F10032
T./ 8DWH0+00AD2Y	ND7*GET4 EL 2 6U	<CJISE.-2/5Y*B/M	3B-DICA KQ/D*BY	H 68 ZI2 RE1	IAG<A*EY89F10033
T.1A.EL 2 6UKDI	SE_ 2/3Y*C1M3B-D	ICAKQ/SY8Y+D K	N<*HAB8C<DWHDX*M	GFT46 *H5-//-	JB--A-T489F10034
T./BEEL 2 6UKBJI	SE8X2/0Y8-AD7CA<	KQ/PVOM+86-HM1I	8OM*86-HM1JHFOM	8G-H ZI2  EIM	JB--A53M89F10035
T./CIEK+KUCB8 /E	BEKUK+286 /8;E/4	K8BBG /8TEU LK8	G /8;EABL888 /8	TEDM 88XIJ8+EJK	<B-<A=1089F10036
T<IC'D8 *8Y 8-E	-L 68/M30M*BF3H	-D+1 <8G /CAEJ6	80+*8FYDND/ /0+	E-JMKH88G - 0MB	DC-CAQH89F10037
T<IDIFYHNDUG /OH	E-8MKUCB8 /DAJ.	POH*8FYR D2-*1K	D8YD8M+8FYEB6*	/OH8/UBL0 3+2	+E J07.889F10038
T<EUMH+8HYU  OU	H< AB-Y*C1M30MD	J+CAEEL  -6YH 6D	N<8B8B/L /O (D	JZCEDE-4 CC_IKO	FJMJ2-89F10039
T<AFNAMS<68H+8E	10+LASJFH+8 N<TH	8A30.EL 2/18EAM	8E ( *F8DSLATAF	R  <N<C O.8-FJH	+8-0885D89F10040
T<J88B+DOOKJ7CO	EJ 8 6 *O-H CN	DEJ73S 6 /1E+  D	N<8B8GR42A/M30H+	JXL--B-8 <K42IKD	E-YF8889F10041
T/(G=8Z H 6MNC8B	ADOMBAJN30H+JK0	11KE 4*868>LT-AP	86*XTINCTS> A4=I	EDCC8 COB 8 Es	KC-YF*8UB9F10042

89F1 DA SYSTEM TEST MODULE

OBJECT CARD LISTING

CL 1 THROUGH 16	CL 17 THROUGH 32	CL 33 THROUGH 48	CL 49 THROUGH 64	CL 65 THROUGH 80	CL 81 THROUGH 96
T+M88+PAIDCTS>	A4=1 GDA 8 COB C	O-AP81 E0=( 8*8	T0) 86DC08 COE E	EJ-04*( 8*8T0	8CD 7R489F10043
T+/IAB COB COB B	M<LE9+XC1N<X94A	SDA SDA SDA SDA	SDA SDA SDA -8_	6+TC USXFX9=	X8D 7T+89F10044
T+/HT08GR->X9=)	6+ A6P#X9=X8DC	S0)V=9=X98AE9*L	18CGF1+(-GDA SDA	SDA SDA SDA SDA	SD -0889F10045
T+/DEDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SD E8Y89F10046
T+/<V8DA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SD P089F10047
T+/-SDA -DPE9*	E0= E1FA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SD PAC89F10048
T+/+8SDA SDA SDA	SDA SDA -D* SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SD 80089F10049
T+/ 0GDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA SDA SDA SDA	SDA S **0+<C1<F	F18TI4).L5(P08*Y
T+/EJ9+PW9=728 G	28*LS*9-8=MACOFE	HCKZ.06_#LEI8-DS	18PE+PW9=LS*9-0+	X1-<8E A-* J C	D1M 10689F10051
TSABE2+ E8+>XDC	.....	.....	.....	.....	0:889F10052
T+/J2 0	.....	BI*ND8 6IU	L1<PV2+ E8+>XG+E	SDA SDA SDA SDA	SD 9EUB9F10053
T+/K_ED JSD C S4	50/7Y48PY6<M8E+L	PE+ 06 .06< M0)V	-E4CD1)-R1;.5867	ES: E8PS D*ECCM	L <D E 289F10054
T+/LY9M  0 <B1*G	8D+1/: 8US .E:<CP	D:/GC8MA SDA SDA	SDA SDA SDA SDA	C*PA5 0W<(-R1;.5	86G4 3H089F10055
T/(M=0 E0)V* 3-	*<TH .8MX*-<	L716A	.....	.....	JP E- 4<A0M).D89F10056
T+ANG	.....	ANY88	D AX.E4_HA MA	6(+86E1ABDG 6Q+I	60UA 0X/ 03R 01 / 4.10089F10057
T+/DL-DN 8FA-9	X97M A 8DCASD_	DCZ8 ANCGJOM?	A<CG90X 80C1/0W?	C2< I0 C8< 107?	05<E R:889F10058
T+/P+8*LT1MCE0+M	.1;TE:8P3IVCF4+R	81?TF=8-C0; T0+	MK4C8E< 6*PA1+T	MS>< 6*LY8 ILN2;	08- 11Y89F10059
T.1P=1+ K2 PTK4C	R1)/.0)P084CA9+6	14+?NSUC15; E6)X	US= I8I 28Y64P	R6 8R	-<89F10060
T+/R8 <8T88G2(L	ES:  08TE0*.15;	*PDE(P084C05+6	T88G2D_ 3+LN14C	89+YI<GT8MCM2;.	C5_6 1A89F10061
T+/E888GRI3LN1*	P1+ T1+J 6*PS*8	NE8PR5+V 8*R 8XP	L1+ T1)ST8+ 06<	M<LE9M_ 2+LN14C	E9+8 2-089F10062
T (J88; (P08<PR6)8	88(P89*E0= E1DC	1E: E6)XU8= N2+	RSUCC8LE6(P084C	LSN8D14L18HDE	00*89F10063
EB/J8E7+8DC*P88	=*788F  C	FR ASC R A	8C 0	.....	0854068721 0237E8E<89F10064

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for FC80 program, including preface and print options sections.

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains assembly code for FC80 program, including preface and print options sections.

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
		106	*****	PRINT OPTIONS SECTION END *****
		107		
0BF9	3D F0 2004	108	CLI	XKFCX,C'0'
0BFD	F2 81 0D	109	JE	SET9S
0C00	3C 11 0EDF	110	SET17S	MVI NUMSEC+1,X'11'
0C04	0C 01 0EB2 184E	111	MVC	NOSPN(2),S17
0C0A	F2 87 0A	112	J	TM15
0C0D	3C 09 0EDF	113	SET9S	MVI NUMSEC+1,X'09'
0C11	0C 01 0EB2 184C	114	MVC	NOSPN(2),S9
0C17	0C 00 0EE6 0EDF	115	TM15	MVC SCNTS+1(1),NUMSEC+1
0C1D	3B 20 0A11	116	TBN	ID14-1,X'20'
0C21	F2 10 68	117	JT	CARDIN
		118		
0C24	3C D9 186A	119	ASKFR	MVI MBMG2-1,C'R'
0C28	3C F1 188B	120	MVI	MBMG3,C'1'
0C2C	C0 87 021A	121	B	PRINT
0C30	01	0C30	122	DC XL1'01'
0C31	3C	0C31	123	DC IL1'60'
0C32	188B	0C33	124	DC AL2(MBMG3)
0C34	3C C6 186A	125	MVI	MBMG2-1,C'F'
0C38	3C F0 188B	126	MVI	MBMG3,C'0'
0C3C	C0 87 021A	127	B	PRINT
0C40	01	0C40	128	DC XL1'01'
0C41	3C	0C41	129	DC IL1'60'
0C42	188B	0C43	130	DC AL2(MBMG3)
		131		
0C44	C0 87 021A	132	MBEXIT	B PRINT
0C48	06	0C48	133	DC XL1'06'
0C49	16	0C49	134	DC IL1'22'
0C4A	18A1	0C48	135	DC AL2(MBMG4)
0C4C	C0 87 0222	136	B	HALT
0C50	89FF	0C51	137	DC XL2'89FF'
		138		
0C52	30 00 1129	139	SNS	WORK,X'00'
0C56	3B F0 1129	140	SBF	WORK,X'F0'
0C5A	3D 00 1129	141	CLI	WORK,0
0C5E	F2 81 79	142	JE	SETF1
0C61	3D 01 1129	143	CLI	WORK,1
0C65	C0 01 0C24	144	BNE	ASKFR
0C69	0C 15 1825 18A1	145	MVC	OVLMSG-2(22),MBMG4
		146		
0C6F	C0 87 021A	147	B	PRINT
0C73	01	0C73	148	DC XL1'01'
0C74	17	0C74	149	DC IL1'23'
0C75	17F8	0C76	150	DC AL2(XMSG4+22)
0C77	C0 87 021A	151	B	PRINT
0C7B	06	0C7B	152	DC XL1'06'
0C7C	28	0C7C	153	DC IL1'40'
0C7D	1825	0C7E	154	DC AL2(OVLMSG-2)
0C7F	C0 87 0222	155	B	HALT
0C83	89F0	0C84	156	DC XL2'89F0'
		157		
0C85	3C 8B 0CF4	158	MVI	SBX,X'85'
0C89	F2 87 52	159	J	SETFIL
		160		
0C8C	C2 01 175A	161	CARDIN	LA XNSG1,XR1
0C90	3A 80 10C6	162	SBM	EPASE,X'80'
0C94	C0 87 0FCB	163	B	PT5471 R1 OR F17
0C98	C0 87 10DB	164	B	INPUTA
0C9C	C0 87 0F50	165	B	SCANIN
0CA0	C0 04 0C8C	166	BNP	CARDIN
0CA4	35 01 0F48	167	L	SYMPTR,XR1
0CAD	1D 01 1775 00	168	CLC	R1,0(XR1)
0CB0	F2 81 0C	169	JE	SETR1
0CB8	1D 01 177B 00	170	CLC	F1,0(XR1)
0CB5	F2 81 22	171	JE	SETF1
0CB8	C0 87 0C8C	172	B	CARDIN
		173	*	

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT
0C8C	3C 8B 0CF4	174	SETR1	MVI SBX,X'85'
0C90	3D 33 0A95	175	CLI	DSKTP,X'33'
0CC4	F2 81 17	176	JE	SETFIL
0CC7	3A 80 10C6	177	SBM	ERASE,X'80'
0CC8	C2 01 17E2	178	LA	XMSG4,XR1
0CCF	C0 87 0FCB	179	B	PT5471
0CD3	C0 87 10DB	180	B	INPUTA
0CD7	F2 87 04	181	J	SETFIL
0CDA	3C 8A 0CF4	182	SETF1	MVI SBX,X'8A'
0CDE	C2 02 1828	183	SETFIL	LA QB7B1-1,XR2
0CE2	36 02 1172	184	SETAGN	A TWD,XR2
0CE6	34 02 0CFA	185	ST	QBPTR,XR2
0CEA	B5 02 00	186	L	0(XR2),XR2
0CED	36 02 1170	187	A	ONE,XR2
0CF1	F2 81 0B	188	JZ	SETDN
0CF4	8B 08 00	189	SBF	0(XR2),X'08'
		190	0CF4	190
0CF7	C2 02 00C0	191	SBX	EQU *-3
		192	0CF4	192
0CF8	C0 87 0CE2	193	08PTR	EQU *-1
		194	0CF4	194
0CF7	38 20 0A11	195	SETDN	EQU *
0D03	F2 10 A1	196	TBN	IC14-1,X'20'
0D06	C0 87 021A	197	JT	M15
0D0A	01	0D0A	198	B PRINT
0D0B	48	0D0B	199	DC XL1'01'
0D0C	18E9	0D0C	200	DC IL1'72'
0D0E	C0 87 021A	201	B	AL2(MBMG5)
0D12	01	0D12	202	DC PRINT
0D13	1D	0D13	203	DC XL1'01'
0D14	1906	0D13	204	DC IL1'29'
0D16	C0 87 021A	0D15	204	DC AL2(MBMG5B)
0D1A	06	0D1A	205	B PRINT
0D1B	16	0D1A	206	DC XL1'06'
0D1C	18A1	0D1B	207	DC IL1'22'
		0D1D	208	DC AL2(MBMG4)
		209		
0D1E	C0 87 0222	210	B	HALT
0D22	89FF	0D23	211	DC XL2'89FF'
		212		
0D24	30 00 1129	213	SNS	WORK,X'00'
0D28	3B F0 1129	214	SBF	WORK,X'F0'
0D2C	3D 01 1129	215	CLI	WORK,1
0D30	F2 81 A1	216	JE	DEFLT
0D33	3D 00 1129	217	CLI	WORK,0
0D37	C0 01 0D06	218	BNE	ASK
		219		
0D3B	C0 87 021A	220	B	PRINT
0D3F	01	0D3F	221	DC XL1'01'
0D40	43	0D40	222	DC IL1'67'
0D41	1949	0D42	223	DC AL2(MBMG6)
0D43	C0 87 021A	224	B	PRINT
0D47	01	0D47	225	DC XL1'01'
0D48	31	0D48	226	DC IL1'49'
0D49	19A5	0D4A	227	DC AL2(MBMG7A)
0D4B	C0 87 021A	228	B	PRINT
0D4F	06	0D4F	229	DC XL1'06'
0D50	2B	0D50	230	DC IL1'43'
0D51	1974	0D52	231	DC AL2(MBMG7)
		232		
0D53	0C 05 1752 1759	233	MVC	MLTAF(6),BLANK
0D59	3C F1 0D66	234	MVI	ENMLT,X'F1'
0D5D	C2 02 174D	235	LA	MLTAF-5,XR2
		236		
0D61	C0 87 0222	237	SWMHT	B HALT
0D65	89F1	0D66	238	ENMLT DC XL2'89F1'
		239		
0D67	30 00 1129	240	SNS	WORK,X'00'
0D6B	8C 00 00 1129	241	MVC	0(1,XR2),WORK

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT	
0D70	3D 40 1129	242	CLI	WORK,X'40'	WAS CHAR A BLANK	
0D74	F2 81 11	243	JE	NAME	DONE IF SO	
0D77	0E 00 0D66 1170	244	ALC	ENHLT(1),ONE	INCREMENT HALT	
0D7D	E2 02 01	245	LA	1(,XR2),XR2	INCREMENT TO NEXT CHAR	
0D80	3D F7 0D66	246	CLI	ENHLT,X'F7'	AT END?	
0D84	C0 01 0D61	247	BNE	SWHLT	IF NOT, GO HALT FOR NEXT CHAR	
		248				
0D88	0C 05 19C3 1752	249	NAME	MVC	MENGBA(6),MLTAF	
0D8E	C0 87 021A	250	B		MOVE NAME TO MESSAGE	
0D92	01	251	DC	XL1'01'	PRINT MESSAGE	
0D93	35	252	DC	IL1'83'		
0D94	19DA	253	DC	AL2(MBNGB)		
0D96	C0 87 021A	254	B			
0D9A	06	255	DC	XL1'06'		
0D9B	16	256	DC	IL1'22'		
0D9C	18A1	257	DC	AL2(MBNG4)		
		258				
0D9E	C0 87 0222	259	B		HALT	
0DA2	89F0	260	DC	XL2'89F0'	HALT TO ALLOW CHECK OF NAME	
0DA4	F2 87 62	261	J		HALT *****F0*****	
		262	*		GO OPEN FILE NOW	
0DA7	C2 01 177E	263	M15	LA	XMS62,XR1	
0DAB	3A 80 10C6	264	SBM	ERASE,X'80'		
0DAF	3A 80 10CC	265	SBM	BUFLG,X'80'	ERASE THE 32XX CRT	
0DB3	C0 87 0FCB	266	B		SET BUFFER FLAG	
0DB7	C2 01 17B3	267	LA	XMS63,XR1		
0DBB	C0 87 0FCB	268	B			
0DBF	38 80 10CC	269	SBF	BUFLG,X'80'	RESET BUFFER FLAG	
0DC3	0F 01 10CE 10CE	270	SLC	SUFFB(2),BUFFB	RESET BUFFER ADDRESS TO ZERO	
0DC9	C0 87 10DB	271	B			
0DCD	C0 87 0F50	272	B			
0DD1	F2 84 0F	273	JP	NDDFT		
0DD4	0C 05 1752 0DE2	274	DEFLT	MVC	MLTAF(6),OFTN	
0DDA	F2 87 2C	275	J			
0DDD	5B5E4C3D9C9	276	OFTN	DC	CL6'68NCR1'	
		277	*			
0DE3	3D 05 0F49	278	NDDFT	CLI	LENGTH,5	
0DE7	C0 84 0CFF	279	BH		SETDN	
0DEB	0C 05 1752 1759	280	MVC	MLTAF,BLANK		
0DF1	0C 00 0E07 0F49	281	MVC	MVCF(1),LENGTH		
0DF7	0C 00 0E06 0F49	282	MVC	MVCL(1),LENGTH		
0DFD	C2 02 174D	283	LA	MLTAF-5,XR2		
0E01	35 01 0F48	284	L	SYMPTR,XR1		
0E05	9C 03 00 00	285	MVC	*->(,XR2),0(,XR1)		
		286	MVCL	EQU	*-3	
		287	MVCF	EQU	*-2	
		288			*****	
		289	**		OPEN FILE	
		290			*****	
0E09	0C 01 1175 174C	291	OPEN	MVC	DSKSEC(2),CS0008	
0E0F	C0 87 114E	292	B		READ	
0E13	1C 01 1175 26	293	MVC	DSKSEC(2),38(,XR1)	READ CYL/SEC 0008 VOL LABEL	
0E18	C0 87 114E	294	RDNXT	B	READ	
0E1C	3C 0C 1753	295	MVI		CNT,12	
0E20	7D FF 00	296	OPEN1	CLI	0(,XR1),X'FF'	CHECK FOR END OF DIRECTORY
0E23	F2 81 27	297	JE		NOTOPN	
0E26	4D 05 06 1752	298	CLC	6(6,XR1),MLTAF	FIND 32XX MICRO-CODE FILE	
0E2B	F2 81 AB	299	JE		FILFND	
0E2E	D2 01 15	300	LA		21(,XR1),XR1	
0E31	0F 00 1753 1170	301	SLC		CNT,ONE	
0E37	C0 01 0E20	302	BWZ		OPEN1	
0E3B	0E 01 1175 117A	303	XLC	ALC	RDDFC+2(2),ONESEC	
0E41	38 60 1175	304	TBN		RDDFC+2,X'60'	
0E45	CC 10 0E3B	305	BT		XLC	
0E49	C0 87 0E18	306	B		RDNXT	
0E4D	C0 87 021A	307	NOTOPN	B	PRINT	
0E51	C7	308	DC		XL1'C7'	
0E52	2E	309	DC		IL1'46'	

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
0E53	0EA2	0E54	310	DC	AL2(NOFIL)
0E55	89F9	0E56	311	DC	XL2'89F9'
0E57	C0 87 0222	312	B		HALT
0E5B	89F9	0E5C	313	DC	XL2'89F9'
0E5D	C0 87 0216	314	B		LINK
0E61	C0 87 021A	315	NOSP	B	PRINT
0E65	C7	0E65	316	DC	XL1'C7'
0E66	36	0E66	317	DC	IL1'54'
0E67	0ED8	0E68	318	DC	AL2(NOSPC)
0E69	89F7	0E6A	319	DC	XL2'89F7'
0E6B	C0 87 0222	320	B		HALT
0E6F	89F7	0E70	321	DC	XL2'89F7'
0E71	C0 87 0216	322	B		LINK
0E75	C3D6E4D3C440D5D6	0EA2	323	NOFIL	DC
0E7D	E340C6C9D5C440D4	323			CL46'COULD NOT FIND MICRO-CODE OBJECT FILE ON DISK'
0E85	C9C3D9D660C3D6C4	323			
0E8D	C540D6C2D1C5C3E3	323			
0E95	40C6C9D3C540D6D5	323			
0E9D	40CAC9E2D240	323			
		0EB2	324	NOSPN	EQU
0EA3	E3C8C5D9C540C1D9	0ED4	325	DC	**15
0EAB	C540D5D6E340E7E7	325			CL50'THERE ARE NOT XX SECTORS ALLOCATED TO MICRO-CODE'
0EB3	40E2C5C3E3D6D9E2	325			
0EBB	40C1D3D3D6C3C1E3	325			
0EC3	C5C440E3D640D4C9	325			
0ECB	C3D9D660C3D6C4C5	325			
0ED3	4040	325			
0ED5	C6C9D3C5	0ED8	326	NOSPC	DC
					CL4'FILE'

ERROR \* F9 \*\*\*\*\*

ERROR \* F7 \*\*\*\*\*

CL46'COULD NOT FIND MICRO-CODE OBJECT FILE ON DISK'

\*\*15  
CL50'THERE ARE NOT XX SECTORS ALLOCATED TO MICRO-CODE'

CL4'FILE'

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
      328 *****
      329 **          DISK FILE FOUND          **
      330 *****
OED9 331 FILFND EQU      *          32XX MICRO-CODE FILE FOUND
      332          MVC      DSKSEC(2),B(.XR1)  SET DISK SECTOR FOR FILE DESP.
      333 NUMSEC CLI     20(.XR1),*-*        CHECK FOR 9 OR 17 SECTORS
      334          BL      NOSP
      335 *
      336 SCNTS MVI      CNT,*-*            SET COUNT TO 9 OR 17
      337          L      TABLE,XR1        GET MICRO CODE ADDRESS IN XR1
      338          ST      MVCFB,XR1
      339 MVCC          MVC      DBUF+255(256),*-*
OEF6 340 MVCFB EQU      *-1
      341          B      WRITE
      342          SLC     MVCFB(2),NG256
      343          SLC     CNT,ONE
      344          BNZ     MVCC
      345          B      PRINT
OFOF 346          DC      XL1'0?'
OFOF 347          DC      IL1'42?'
OFOF 348          DC      AL2(NDMSG)
      349          B      LINK
OFOF 350 NDMSG DC      CL42'MICRO-CODE HAS BEEN COPIED TO SYSTEM PACK'
      351
      352 *****
      353 * SCANIN *
      354 *****
      355 *
      356 * SCANIN PICK UPS A SYMBOL IN A BUFFER. BLANK AND COMMA ARE
      357 * DELIMITERS THAT TERMINATES THE ROUTINE.
      358 *
      359 *
      360 *
      361 *
      362 * SCANIN PARAMETERS
      363 * *****
      364 * INPUTB * START B OF BUFFER *
      365 * INPUTN * END B OF BUFFER *
      366 * NXTSTR * NEXT START B *
      367 * SYMPTR * PTR TO SYMBOL *
      368 * LENGTH * LENGTH OF SYMBOL-1 *
      369 * *****
      370 * ON EXIT: NXTSTR, SYMPTR, LENGTH WILL BE SET ALONG WITH
      371 * THE CONDITON REG. AS FOLLOWS:
      372 * NEG - END OF INPUT (EOI)
      373 * ZERD- NULL SYMBOL
      374 * POS - SYMBOL FOUND
      375 *****
      376
OFA1 0A13 OF42 377 INPUTB DC AL2(INPUT+1-LNG)
OFA3 0A1C OF44 378 INPUTN DC AL2(INPUT)
OFA5 0A13 OF46 379 NXTSTR DC AL2(INPUT+1-LNG)
OFA7 000C OF48 380 SYMPTR DC AL2(*-*)
OFA9 00 OF49 381 LENGTH DC IL1'0'
OFAA 00C2 OF4B 382 NEG DC XL2'02'
OFAC 0004 OF4D 383 POS DC XL2'04'
OF4E 0001 OF4F 384 XNE DC IL2'1'
      0004 385 PSR EQU 4
      386
OFS0 C2 31 OF42 387 SCANIN LA INPUTB,XR1

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FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

```

ERR LOC OBJECT CODE      ADDR STMT SOURCE STATEMENT
      OF54 74 08 78 OF42 388          USING INPUTB,XR1
      OF57 75 02 04 389          ST      SCANEX(.XR1),ARR
      OF5A 7C FF 07 390 SCAN1 L      NXTSTR(.XR1),XR2
      OF5D 4D 01 04 0A1F 391          MVI      LENGTH(.XR1),X'FF'
      OF62 F2 84 60 392          CLC     NXTSTR(.XR1),END(2)
      OF65 8D 40 00 393          JH      EOI
      OF68 F2 01 07 394          CLI     0(.XR2),C' '          SKIP LEADING BLANK(S)
      OF6B SE 01 04 0D 395          JNE     SCAN2
      OF6F D0 87 15 396          ALC     NXTSTR(.XR1),XNE(.XR1)
      397          B      SCAN1(.XR1)
      398
      OF72 4D 01 04 0A1F 399 SCAN2 CLC     NXTSTR(.XR1),END(2)          FIND LAST CHAR OF SYMBOL
      OF77 F2 84 1C 400          JH      SCAN3
      OF7A 8D 40 00 401          CLI     0(.XR2),C' '          TERMINATE ON BLANK OR .
      OF7D F2 81 16 402          JE      SCAN3
      OF80 8D 6B 00 403          CLI     0(.XR2),C' '
      OF83 F2 81 10 404          JE      SCAN3
      OF86 SE 00 07 0D 405          ALC     LENGTH(.XR1),XNE(.XR1)
      OF8A 74 02 06 406          ST      SYMPTR(.XR1),XR2
      OF8D E2 02 01 407          LA      1(.XR2),XR2
      OF90 74 02 04 408          ST      NXTSTR(.XR1),XR2
      OF93 D0 87 30 409          B      SCAN2(.XR1)
      410
      OF96 411 SCAN3 EQU *
      412
      OF99 4D 01 04 0A1F 413 SCAN4 L      NXTSTR(.XR1),XR2          SKIP TO NEXT CHAR AFTER . OR
      OF9E F2 84 10 414          CLC     NXTSTR(.XR1),END(2)          EOI AND SET NXTSTR
      OFA1 8D 40 00 415          JH      SCAN5
      OFA4 F2 81 17 416          CLI     0(.XR2),C' '
      OFA7 8D 6B 00 417          JE      SCAN5
      OFA9 F2 01 04 418          CLI     0(.XR2),C' '
      OFAD SE 01 04 0D 419          JNE     SCAN5
      OFB1 7D FF 07 420          ALC     NXTSTR(.XR1),XNE(.XR1)
      OFB4 F2 81 03 421 SCAN51 CLI     LENGTH(.XR1),X'FF'
      OFB7 75 04 0B 422          JZ      SCAN5
      OFBA C0 87 0000 423          L      POS(.XR1),PSR
      424 SCAN5 B      *-#
      OFBD 425 SCANEX EQU *-1
      426
      OFBE SE 01 04 0D 427 SCAN6 ALC     NXTSTR(.XR1),XNE(.XR1)
      OFC2 D0 87 54 428          B      SCAN4(.XR1)
      429
      OFC5 75 04 09 430 EOI L      NEG(.XR1),PSR
      OFC8 D0 87 78 431          B      SCAN5(.XR1)
      432
      OFCB 34 08 OFD6 432          PT5471 ST     PTXB,ARR
      OFCF C0 87 OFD7 434          B      DISPLY
      OFD3 C0 87 0000 435 PTEXT B      *-#
      OFD6 436 PTXB EQU *-1

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FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

438 *****
439 * DISPLY * 32XX DISPLAY ROUTINE TO DISPLAY MESSAGES *
440 *****
441 * ON THE 32XX CRT *
442 *
443 * ON ENTRANCE:1XP1 POINTS TO MESSAGE *
444 *
445 * ON EXIT:1XR1 WILL POINT TO A 0 OR 1 IN THE MESSAGE *
446 *
447 *****
448
449 DISPLY TBN CRTFLG,X'FF' TEST FOR MICROCODE LOADED
450 JT *+9
451
452 B HALT MICRO CODE NOT LOADED ERROR
453 DC XL2'89E7' HALT - E7 *****
454 MVI CRTFLG,X'FF' HALT ONLY ONCE
455
456 TIO MAKRDY,NRDY TEST FOR 32XX ATTACHMENT NOT READY
457 J RDY
458
459 MAKRDY SIO X'80',SIO1 DISABLE THE MICRO CONTROLLER
460 SIO X'E0',SIO1 ENABLE
461 CLC *(100),*
462
463 RDY TBN ERASE,X'80' TEST FOR ERASE FLAG
464 JF PT32XX DON'T ERASE THE 32XX CRT
465
466 L RESET0,IAR1 RESET ANY PRIOR PENDING CONDITIONS
467 SIO X'01',SIO1 ENABLE INTERRUPTS
468
469 L INT0,IAR1 POINT TO THE INTERRUPT SUBROUTINE
470 SIO X'C1',X'10' ERASE THE 32XX CRT
471 S INTAKN LOOP UNTIL AN INTERRUPT
472 SBF ERASE,X'80' RESET THE ERASE FLAG
473
474 * THE FOLLOWING CODING WILL WRITE 480 BLANKS
475 * TO THE 32XX BUFFER TO GET RID OF ANY
476 * ATTRIBUTE CHARACATERS LEFT FROM OTHER
477 * PROGRAMS
478
479 PASOVR JC PT32XX,X'07' BYPASS THE FOLLOWING AFTER 1ST PASS
480 MVI BLKCNT,X'06' SET COUNTER TO 6
481 LIO BUFF0,X'10' LOAD BUFFER ADDRESS REGISTER
482 NXTLNE LIG DATAB,X'1B' LOAD MAIN STORAGE DATA ADDR REGISTER
483 LIO COUNT,X'12' LOAD COUNT REGISTER
484 L INT0,IAR1 POINT TO INTERRUPT SUBROUTINE
485 SIO X'91',X'10' WRITE TWO LINES OF BLANKS
486 B INTAKN LOOP UNTIL AN INTERRUPT
487 SLC BLKCNT,ONE SUBTRACT ONE FROM BLANK COUNTER
488 BNZ NXTLNE GO WRITE TWO MORE LINES OF BLANKS
489 MVI PASOVR+1,X'87' INDICATE 1ST PASS THROUGH
490
491 * END OF WRITE 480 BLANKS
492
493 PT32XX MVI X'08FF',C* BLANK INPUT BUFFER
494 MVI X'08FE'((131)),X'08FF' BLANK INPUT BUFFER
495 LA DCPBUF,XR2 POINT TO 1ST POSITION OF DCP BUFFER
496 PT32 MVI 0(.XR2),0(.XR1) MOVE CHARACTER TO BUFFER
497 LA 1(.XR1),XR1 POINT TO NEXT CHARACTER
498 CLI 0(.XR1),0 END OF MESSAGE ?
499 JE LCADMS JUMP IF YES
500 LA 1(.XR2),XR2 POINT TO NEXT POSITION IN DCP BUFFER
501 B PT32
502 LOADMS LIO DATAB,X'1B' LOAD MAIN STORAGE ADDR REGISTER
503 LIO BUFF0,X'10' LOAD MESSAGE ADDR REGISTER
504 LIO COUNT,X'12' LOAD REGISTER

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

1072 31 15 10D1 505 LIO POSCSR,X'15' LOAD CURSOR POSITION REGISTER
1076 35 C0 10D5 506 L INT0,IAR1 POINT TO INTERRUPT ROUTINE
107A F3 10 91 507 SIO X'91',X'10' WRITE TO THE 32XX CRT
107D C0 87 1092 508 B INTAKN LOOP UNTIL AN INTERRUPT
1081 38 80 10CC 509 TBN BUFLG,X'80' TEST FOR INCREMENTING BUFFER ADDR
1085 F2 90 06 510 JF *+9 JUMP IF NO
1088 0E 01 10CE 10C9 511 ALC BUFF0(2),COUNT POINT TO LINE 3 ON THE 32XX SCREEN
108E C0 87 0FD3 512 B PTEXT
513
514 *****
515 * THIS SUBROUTINE CHECKS FOR AN INTERRUPT *
516 * TAKEN. IT CHECKS FOR THE 32XX BEING *
517 * NOT READY OR A 32XX UNIT ERROR. ON EXIT, *
518 * IT RESETS THE INTERRUPT AND ERASE FLAG *
519 *****
520
521 INTAKN ST ENDINT+3,ARR SAVE RETURN
522 INTERR TBN INTFLG,X'80' INTERRUPT TAKEN ?
523 SBF INTERR LOOP UNTIL AN INTERRUPT
524 SBF INTFLG,X'80' RESET THE INTERRUPT FLAG
525 TBN STATUS-1,X'08' ANY 32XX ERROR OR NOT READY?
526 JF ERROR
527 ENDINT B ** RETURN
528
529 *****
530 * 32XX ERROR SUBROUTINE *
531 *****
532 ERRCR B HALT ERROR HALT
533 DC XL2'89E8' HALT -E8-*****
534 B CARDIN START OVER AGAIN

```

```

1092 34 08 10AC
1096 36 80 10D6
109A C0 90 1096
109E 38 80 10D6
10A2 39 08 10D7
10A6 F2 90 04
10A9 C0 87 0000

```

```

10AD C0 87 0222
10B1 89E8
10B3 C0 87 0C8C

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

536 *****
537 *          32XX INTERRUPT SUBROUTINE USED TO          *
538 *          SET THE INTERRUPT FLAG, SENSE THE          *
539 *          INTERRUPT CONDITION REGISTER AND            *
540 *          RESET AND DISABLE INTERRUPTS                *
541 *****
1087 3A 80 10D6 542 PENDNG SBN INTFLG,X*80*          SET INTERRUPT FLAG
1088 30 16 10D8 543          SNS STATUS,X*16*          SENSE THE INTERRUPT CONDITION REG
108F F3 18 03 544 RESET SIO X*03*,SIOI          RESET AND ENABLE INTERRUPTS
10C2 C0 87 10BF 545          B RESET          LOOP UNTIL NO INTERRUPT PENDING
546 *****
547 *****
548 *          32XX EQUATES AND CONSTANTS                *
549 *****
10C6 00 10C6 550 ERASE DC XL1*00*          ERASE FLAG
10C7 00 10C7 551 BLKCNT DC XL1*00*          BLANK LINE COUNTER
10C8 0050 10C9 552 COUNT DC IL2*80*          COUNT REGISTER LENGTH = 80
10CA 0009 10CB 553 COUNT9 DC IL2*09*          COUNT REGISTER LENGTH = 09
10CC 00 10CC 554 BUFLG DC XL1*00*          BUFFER FLAG
10CD 0000 10CE 555 BUFB DC IL2*00*          BUFFER ADDRESS REGISTER
10CF C00190 10D1 556 POSCSR DC IL3*400*          CURSOR POSITION REGISTER
10D2 0880 10D3 557 DATA8 DC AL2(DCPBUF)          MAIN STORE REGISTER
10D4 1087 10D5 558 INT8 DC AL2(PENDNG)          ADDRESS OF 32XX INTERRUPT ROUTINE
10D6 00 10D6 559 INTFLG DC XL1*00*          INTERRUPT FLAG
10D7 0000 10D8 560 STATUS DC XL2*00*          32XX INTERRUPT CONDITION REGISTER
10D9 108F 10DA 561 RESET8 DC AL2(RESET)          ADDRESS OF 32XX RESET ROUTINE
0880 562 DCPBUF EQU X*0880*          DCP BUFFER ADDRESS
0018 563 SIOI EQU X*18*          SIO IMMEDIATE
0879 564 CRTFLG EQU X*0879*          INDICATE MICROCODE LOADED
0018 565 NRDY EQU X*18*          32XX ATTACHMENT NOT READY
566 *****
10DB 567 INPUTA EQU *
568 *****
569 * INPUT5* SUBROUTINE TO INPUT FROM 32XX INTO A -LNG- BYTE BUFFER *
570 ***** EACH INPUT CHAR IS DISPLAYED ON THE 32XX CRT *
571 *****
572 *****
10DB 34 08 1127 573 INPUT5 ST ENDS+3,ARR          SAVE RETURN ADDRESS
10DF 3C 40 08FF 574 MVI X*08FF*,C' '          BLANK INPUT BUFFER
10E3 0C 82 08FE 08FF 575 MVC X*08FE*(131),X*08FF*          BLANK INPUT BUFFER
10E9 31 12 10C8 576 LIC COUNT9,X*12*          LOAD COUNT REGISTER
10ED 31 18 0F42 577 LIO INPUT8,X*18*          LOAD MAIN STORAGE REGISTER
10F1 31 10 10D1 578 LIO POSCSR,X*10*          LOAD MESSAGE BUFFER ADDRESS REGISTER
10F5 35 C0 10D5 579 TRYAGN L INT8,IARI          POINT TO THE INTERRUPT ROUTINE
10F9 F3 18 01 580 SIO X*01*,SIOI          ENABLE INTERRUPTS
10FC F3 10 00 581 SIO X*00*,X*10*          UNLOCK THE KEYBOARD
10FF C0 87 1092 582 B INTAKN          LOOP UNTIL INTERRUPT
1103 35 C0 10D5 583 L INT8,IARI          POINT TO THE INTERRUPT ROUTINE
1107 C0 87 1092 584 B INTAKN          LOOP UNTIL INTERRUPT
1108 30 3D 10D8 585 CLI STATUS,X*3D*          ENTER KEY ?
110F C0 01 10F5 586 BNE TRYAGN          TRY AGAIN IF NOT ENTER KEY
1113 35 C0 10D5 587 L INT8,IARI          POINT TO THE INTERRUPT ROUTINE
1117 F3 10 51 588 SIO X*51*,X*10*          READ THE 32XX BUFFER
111A C0 87 1092 589 B INTAKN          LOOP UNTIL INTERRUPT
111E 0C 01 0F46 CF42 590 MVC NXTSTR(2),INPUT8
1124 C0 87 0000 591 ENDS B *-*          RETURN
592 *****
593 *****
594 *          CONSTANT                                  *
595 *****
596 *****
1128 C0C0 1129 597 WCRK DC XL2*0*
112A FF00 1128 598 NG256 DC IL2*-256*

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

600 *****
601 **          DISK WRITE I/O SET-UP SECTION          **
602 *****
603 *****
1159 604          USING BASE1,XR2
605 WRITE ST WRTXB,ARR
606 LA BASE1,XR2
607 B STRTIO(.XR2)          SEEK TO SECTOR
1137 608 Z1 DC XL1*8*
609 MVI RDDFC+3(.XR2),0
610 B STRTIO(.XR2)          WRITE SECT3R
113E 611 Z15 DC XL1*A*
612 ALC ALC RDDFC+2(2,XR2),ONESEC(.XR2) INCREMENT TO NEXT SECTOR
613 TBN RDDFC+2(.XR2),X*60*
614 BT ALC
615 B *-*
114D 616 WRTXB EQU *-1
617 *****
618 *****
619 **          DISK READ I/O SET-UP SECTION          **
620 *****
621 *****
621 *****
114E 622 READ EQU *
00A2 623 BUSY EQU X*A2*
00AE 624 CTLREG EQU X*AE*
00A0 625 NTRDY EQU X*A0*
626 LA SKR2,XR2
627 LA BASE1,XR2
1159 628 USING BASE1,XR2
629 ST SARR(.XR2),ARR
1159 630 BASE1 EQU *
631 B STRTIO(.XR2)          SEEK
115C 632 Z2 DC XL1*8*
633 MVI RDDFC+3(.XR2),0
634 B STRTIO(.XR2)          READ COMMAND
1163 635 Z3 DC XL1*9*
636 L DFDR(.XR2),XR1
637 LA *-9,XR2
116A 638 SKR2 EQU *-1
639 B *-*
116E 640 SARR EQU *-1

```

```

112C 34 08 114D
1130 C2 02 1159
1134 E0 87 3C
1137 08
1138 BC 00 1D
113E E0 87 3C
113E 0A
113F AE 01 1C 21
1143 B8 60 1C
1146 C0 10 113F
114A C0 87 0000
114E C2 02 116A
1152 C2 02 1159
1156 B4 08 15
1159 E0 87 3C
115C 08
115D BC 00 1D
1160 E0 87 3C
1163 09
1164 B5 01 2D
1167 C2 02 0000
1168 C0 87 0000

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

642 *****
643 ** DDCF FIELD **
644 *****
645 **** BYTE 1 **** BYTE 2 **** BYTE 3 **** BYTE 4 ****
646 *****
647 **** FLAG **** CYLINDER **** TRACK / **** NUMBER ****
648 **** BYTE **** BYTE **** SECTOR **** OF SECTORS **
649 **** **** **** NUMBER **** OR TRACKS **
650 *****
651 *****
116F 0001 1170 652 ONE DC XL2*1*
1171 0002 1172 653 TWO DC IL2*2*
1173 00 1173 654 RDDFC DC XL1*00* FLAG BYTE ** BL *****
1174 00 1174 655 DC XL1*00* CYLINDER BYTE ** OC **
1175 08 1175 656 DC XL1*08* TRACK & SECTOR NO. BYTE ** KE **
1176 00 1176 657 DC XL1*00* NUMBER OF SECTORS OR TRACKS BYTE ***** D **
1177 0000 1178 658 SENSE DC XL2*0*
1179 0004 117A 659 ONESEC DC XL2*4*
117B 0000 117C 660 EXTSAV DC XL2*0*
117D 117F 117E 661 RECAB0 DC AL2(*+2) *****
117F 000000FF 1182 662 DC XL4*FF* * MUST BE TOGETHER *
663 * *****
1183 1173 1184 664 NRMDFC DC AL2(RDDFC)
1185 1648 1186 665 DFDR DC AL2(DBUF)
1186 666 DBUF0 EQU *-1
1187 1189 1188 667 ALTCFC DC AL2(ARDDFC)
1189 00 1189 668 ARDDFC DC XL1*0* FLAG BYTE ** BL *****
118A 00 118A 669 DC XL1*0* CYLINDER BYTE ** OC **
118B 00 118B 670 DC XL1*0* TRACK & SECTOR NO. ** KE **
118C 00 118C 671 DC XL1*0* NUMBER OF SECTORS OR TRACKS ***** D **
118D 118F 118E 672 LAST0 DC AL2(*+2) *****
118F 00 118F 673 DC XL1*0* * MUST BE TOGETHER FLAG BYTE ** DC **
1190 00 1190 674 LASTAD DC XL1*0* * CYL BYTE ** KE **
1191 00 1191 675 DC XL1*0* ***** SEC BYTE ***** D **
1192 00 1192 676 DSKDRV DC XL1*0*
1193 1159 1194 677 DC AL2(BASE1)
118D 678 RECARD EQU *-1-7
1173 679 DSKFLG EQU RDDFC
1174 680 DSKCYL EQU RDDFC+1
1175 681 DSKSEC EQU RDDFC+2
1176 682 DSKNUM EQU RDDFC+3

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE ADDR STMT SOURCE STATEMENT

```

684 *****
685 * START I/O SUBROUTINE
686 *****
687 *****
688 STRTID EQU *
689 L NRMDFC(.XR2),XR2 LOAD BASE VALUE FOR START I/O
690 USING RDDFC.2
691 STPARM ST SETXR1(.XR2),ARR SAVE ADDRESS RECALL REGISTER
692 LDPARM L SETXR1(.XR2),XR1 LOAD XR1 AS PARAMETER POINTER
693 MNN SIO+1(.XR2),0(.XR1) SET FUNCTION CODE IN SIO
694 B DISK33
695 DISK54 EQU *
696 Z14 LIO NRMDFC(.XR2),CTLREG LOAD CONTROL REG.
697 TIO NCTRDY(.XR2),X'A0' DISK READY?
698 SNS SENSE(.XR2),CTLREG SENSE THE CURRENT CTL. FLD. ADDR.
699 TBF 0(.XR1),X'07' TEST FOR SEEK
700 L SENSE(.XR2),XR1 LOAD XR1 AS POINTER
701 * TO DISK CONTROL FIELD.
702 JF ADREXT NO. SKIP SET ADDRESS.
703
704 Z4 LIC LAST0(.XR2),CTLREG
705 Z5 SIO 1,X'A9' READ ID
706 TIO *(.XR2),BUSY
707 TBF LASTAD-1(.XR2),3 TEST FOR ALT. OR DEFECT. TRK
708 JT OK
709 Z6 LIO RECAB0(.XR2),CTLREG
710 Z7 SIO 0,X'A8' RECALIBRATE
711 TIO *(.XR2),BUSY
712 MVI LASTAD(.XR2),0
713 OK EQU *
714 Z8 LIC SENSE(.XR2),CTLREG RESTORE CTLREG
715 MVI 3(.XR1),0 SET SEEK # TO 0
716 CLC 1(.XR1),LASTAD(1,XR2) COMPARE NEW ADDRESS WITH OLD
717 JE ADREXT EQUAL. SEEK NOT NECESSARY
718 JH FWDSEK NEW ADDR. HIGHER. DO FORWARD SEEK
719 MVC SCRCH(1,XR2),LASTAD(.XR2) PLACE LAST ADDR. IN WORKAREA
720 SLC SCRCH(1,XR2),1(.XR1) SUBTRACT NEW ADDR. FROM LAST
721 J SETADB PROCEED
722
723 FWDSEK SBN 2(.XR1),01 SET BIT ON FOR FORWARD SEEK
724 MVC SCRCH(1,XR2),1(.XR1) PLACE NEW ADDRESS IN WORK AREA
725 SLC SCRCH(1,XR2),LASTAD(.XR2) SUBTRACT LAST ADDR. FROM NEW
726
11FA 727 SCRCH EQU **1
728 SETADB MVI 3(.XR1),*-1 INSERT NO. OF TRACKS TO CROSS
729 MVC LASTAD(1,XR2),1(.XR1) SAVE NEW ADDRESS
1200 730 ADREXT EQU *
731
732 Z9 LIO DFDR(.XR2),X'AC' LOAD DATA REGISTER
733 SIO 0,X'A0' START I/O OPERATION
734 TIO *(.XR2),BUSY WAIT TILL COMPLETE
735
736 SBF 2(.XR1),01 TURN OFF FOR. / REV. BIT
737
738 TIC DSKERR(.XR2),NTRDY BRANCH IF ERROR
1212 739 SETXR1 EQU **3
740 LA **,.XR1 LOAD XR1 AS PARAMETER POINTER
741 LA BASE1,XR2 LOAD XR2 AS BASE
1159 742 USING BASE1.2
743 B 1(.XR1) EXIT
744
745 *****
746 ** DISK ERROR SECTION **
747 *****
748
749

```



FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

1332 C2 01 12E8      1332 845 GPC2 EQU *
1336 0C 01 12EA 1175 12E8 846 USING STARTN,XR1
133C 4C 00 04 1204 847 LA STARTN,XR1
1341 5C 00 03 04 848 MVC IOBCHN-1(2),DSKSEC
849 MVC IOB08(1,XR1),SIO+1 SAVE THE 5444 0 CODE
850 MVC IOBCHN(1,XR1),IOB08(XR1) SAVE THE 5444 0 CODE
12DF 851 USING TABLES,XR2
852 LA TABLES,XR2 LOAD REG 2 WITH ADDRESS OF TABLE
853 YEM IOBCHN(XR1),X*10* 0 CODE FOR SPINDLE 1?
854 JF CKFIXD JUMP IF REG 2 IS OK
855 LA 4(XR2),XR2 BUMP TO POINT TO SECOND HALF
1352 78 08 03 856 CKFIXD TBN IOBCHN(XR1),X*08* 0 CODE FOR FIXED DRIVE?
1355 F2 10 03 857 JT NEWDRV JUMP IF FOR F1 OR F2
1358 E2 02 02 858 LA 2(XR2),XR2 BUMP IF FOR REMOVABLE
859
859
860 *****
861 * REGISTER 2 NOW POINTS TO THE TABLE ENTRY CORRESPONDING TO THE *
862 * REQUESTED 5444 DRIVE. *
863 *****
864
1358 2C 00 1371 01 865 NEWDRV MVC CYSTRY(1),1(XR2) SET MOVE INSTRUCTION TO PICKUP START
866 * CYLINDER OF SIMULATED AREA
867 NZZ IOB08(XR1),0(XR2) MOVE IN THE ZONE OF OPERATION CODE
868 TBN 0(XR2),X*08* FOR 3340 DRIVE 2 OR 4?
869 SBN IOB08(XR1),X*08* ASSUME 3340 DRIVE 2 OR 4
870 JT CVTCTH GO START THE CONVERSION
871 SBF IOB08(XR1),X*08* CORRECT A BAD ASSUMPTION
872 CVTCTH MVI IOBCHN-3(XR1),0 MOVE IN START OF SIMULATION AREA
1371 873 CYSTRY EQU *-2
874 CLI IOBCHN-2(XR1),X*04* CHECK FOR 5444 CYL 0,1,2, OR 3
875 JL CKCYLO IF LOW GO CHECK FOR CYL 0
876 CLI IOBCHN-2(XR1),X*08* CHECK FOR CYLINDER 203?
877 SML ERRMSG CYLINDER 203 OR GREATER IS INVALID
878 SLC IOBCHN-2(1,XR1),SVNTEN SUBTRACT NUMBER OF 44 TRACKS
879 * POSSIBLE ON FIRST 3340 CYLINDER
880 JN ADDBAK JUMP IF 44 CYLINDER IS ON FIRST
881 * SIMULATED 3340 CYLINDER
882 CKZERO CLI IOBCHN-2(XR1),X*00* SEE IF CYLINDER WENT ZERO
883 JE UPCYLN IF ZERO CONVERSION OF CYL IS
884 * ALMOST DONE.
885 ALC IOBCHN-3(1,XR1),ONE ADD ONE TO 3340 CYLINDER
886 SLC IOBCHN-2(1,XR1),FORTEN SUBTRACT NUMBER OF 44 CYLINDERS
887 * POSSIBLE ON NEXT 3340 CYLINDER
888 JN ADDBAK JUMP IF RESULT WENT NEGATIVE
1398 C0 07 1388 889 B CKZERO LOOP BACK AND CHECK AGAIN
890
139F 7D 00 01 891 CKCYLO CLI IOBCHN-2(XR1),X*00* IS THE REQUEST FOR CYLINDER ZERO?
13A2 C0 01 12ED 892 SNE ERRMSG IF NOT FOR ZERO, ERROR
13A6 F2 07 00 893 J CVTSTR GO TO CONVERT SECTOR TO RECORD
894
13A9 4E 00 00 1170 895 UPCYLN ALC IOBCHN-3(1,XR1),ONE UPDATE TO NEXT 3340 CYLINDER
13AE F2 07 05 896 J CVTSTR GO CONVERT SECTOR TO RECORD
897
13B1 4E 00 01 1200 898 ADDBAK ALC IOBCHN-2(1,XR1),FORTEN ADD BACK FOURTEEN WHEN RESULT
899 * GOES MINUS.
900
13B6 3C 01 12E7 901 CVTSTR MVI HEADWA,X*01* INITIALIZE WORK AREA WITH A 1
13BA 7D 00 02 902 CLI IOBCHN-1(XR1),X*00* REQUEST FOR A 5444 SECTOR ZERO?
13BD F2 01 21 903 JE EXIT CONVERSION IS DONE
13C0 78 00 02 904 TBN IOBCHN-1(XR1),X*80* TRACK 2 OF 5444 REQUESTED?
13C3 F2 00 05 905 JF BUMP JUMP IF TRACK 1 WAS REQUESTED
13C6 4F 00 02 12D8 906 SLC IOBCHN-1(1,XR1),NEX20 MAKE TRACK 2 AND 1 CONTIGUOUS
907
13CB 7D FC 02 908 BUMP CLI IOBCHN-1(XR1),X*FC* DID SECTOR NUMBER GO MINUS?
13CE C0 04 12ED 909 BN ERRMSG ERROR IF SECTOR IS MINUS
13D2 0E 00 12E7 1170 910 ALC HEADWA(1),ONE ADD ONE TO RECORD NUMBER

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC OBJECT CODE

ADDR STMT SOURCE STATEMENT

```

1308 4F 00 02 12DC 911 SLC IOBCHN-1(1,XR1),FOUR DECREMENT SECTOR COUNT
130D C0 01 13CB 912 BNZ BUMP LOOP BACK IF NOT ZERO
913
13E1 4C 00 02 12E7 914 EXIT MVC IOBCHN-1(1,XR1),HEADWA MOVE RECORD COUNT TO IOB
13E6 0C 00 15D9 12E8 915 MVC DDCF+2(1),IOBCHN-3 MOVE CYLINDER NUMBER
13EC 0C 00 150B 12E9 916 MVC DDCF+4(1),IOBCHN-2 MOVE HEAD NUMBER
13F2 0C 00 15DC 12EA 917 MVC DDCF+5(1),IOBCHN-1 MOVE RECORD NUMBER
918 *****
919 * END OF 5444 TO 3340 SIMULATION CONVERSION ROUTINE *
920 *****

```

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic code listings from 13F8 to 14D2.

DATE 26JUN75 EC NO. 825023

PROG ID FC8-0 PAGE 10

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE, STATEMENT. Contains diagnostic code listings from 14D3 to 15DA.

DATE 26JUN75 EC NO. 825023

PROG ID FC8-0 PAGE 10A

IBM MAINTENANCE DIAGNOSTIC PROGRAM

PART NO. 4234265
PAGE 11

FC00 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly instructions like DC, EQU, DSKFCT, DDCFB, DDCZ, DDZL, DDCX, DSNSE, PSNS.

1603
161B

DATE 26JUN75
EC NO. 825023

PROG ID FC0-0
PAGE 11

IBM MAINTENANCE DIAGNOSTIC PROGRAM

PART NO. 4234366
PAGE 11A

FC00 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

Table with columns: ERR LOC, OBJECT CODE, ADDR, STMT, SOURCE STATEMENT. Contains assembly instructions like DBUF, DS, DC, EQU, DSKFCT, DDCFB, DDCZ, DDZL, DDCX, DSNSE, PSNS, DSKFCT, DDCFB, DDCZ, DDZL, DDCX, DSNSE, PSNS, DSKFCT, DDCFB, DDCZ, DDZL, DDCX, DSNSE, PSNS.

LINK TO MICRO CODE MAP IN 893
LINK TO MICRO DECK ID IN 893

MICRO-CODE LOADED FLAG

PROG ID FC0-0
PAGE 11A

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
1850	C9C640E2E8E2E3C5	1868	1114	M8MG2 DC	CL28*IF SYSTEM PACK WILL BE ON R1*
1858	D440D7C1C3D240E6		1114		
1860	C9D3C340C2C5A0D6		1114		
1868	D540D9F1		1114		
186C	6840E2C5E340D9C9	188B	1115	M8MG3 DC	CL32*. SET RIGHTMOST DATA SWITCH TO 1*
1874	C7C8F3D4D6E2E340		1115		
187C	C4C1E3C140E2E6C9		1115		
1884	E3C3C840E3D640F1		1115		
188C	C9C5E2C5E340C8C1	18A1	1116	M8MG4 DC	CL22*RESET HALT TO CONTINUE*
1894	D3E340E3D640C3D6		1116		
189C	D5E3C9D5E2C5		1116		
18A2	C9C640E2E8E2E3C5	18D5	1117	DC	CL52*IF SYSTEM PACK MICRO-CODE OBJECT FILE NAME IS \$SMCRI*
18AA	D440D7C1C3D240D4		1117		
18B2	C9C3D9D660C3D6C4		1117		
18BA	C540D6C2D1C6C3E3		1117		
18C2	40C6C9D3C540D5C1		1117		
18CA	D4C540C9E2405B5B		1117		
18D2	C4C3D9C9		1117		
18D6	6840E2C5E340C4C1	18E9	1118	M8MG5 DC	CL20*. SET DATA SW 4 = 1.*
18DE	E3C140E2E640F440		1118		
18E6	7E40F14B		1118		
18EA	D6E3C8C5D9E6C9E2	1906	1119	M8MG5B DC	CL29*OTHERWISE. SET DATA SW 4 = 0.*
18F2	C56B40E2C5E340C4		1119		
18FA	C1E3C140E2E640F4		1119		
1902	407E40F04B		1119		
1907	C5D5E3C5D940C6C9	1937	1120	DC	CL49*ENTER FILE NAME 1 CHAR. AT A TIME IN EBCDIC CODE *
190F	D3C540D5C1D4C540		1120		
1917	F140C3C8C1D94B40		1120		
191F	C1E340C140E3C9D4		1120		
1927	C540C9D540C5C2C3		1120		
192F	C4C9C340C3D6C4C5		1120		
1937	40		1120		
1938	E4E2C9D5C740C4C1	1949	1121	M8MG6 DC	CL18*USING DATA SW 3.4.*
1940	E3C140E2E640F36B		1121		
1948	F44B		1121		
194A	D9C5E2C5E340C8C1	1974	1122	M8MG7 DC	CL43*RESET HALTS F1-F6 AS EACH CHAR. IS ENTERED.*
1952	D3E3E240C6F16CC6		1122		
195A	F640C1E240C5C1C3		1122		
1962	C840C3C8C1D94B40		1122		
196A	C9E240C5D5E3C5D9		1122		
1972	C5C44B		1122		
1975	D4C1E74B40D5C1D4	19A5	1123	M8MG7A DC	CL49*MAX. NAME IS 6 CHAR. BLANK WILL TERMINATE ENTRY.*
197D	C540C9E240F640C3		1123		
1985	C8C1D94B4040C2D3		1123		
198D	C1D5D240E6C9D3D3		1123		
1995	40E3C5D9D4C9D5C1		1123		
199D	E3C540C5D5E3D9E8		1123		
19A5	4B		1123		
19AE	C6C9D3C540D5C1D4	19C3	1124	M8MG8A DC	CL30*FILE NAME TO BE USED IS XXXXXX*
19AE	C540E3D640C2C540		1124		
19B6	E4E2C5C440C6E240		1124		
195E	E7E7E7E7E7E7		1124		
19C4	4B4040D9C5E2E3C1	19DA	1125	M8MG8 DC	CL23*. RESTART IF INCORRECT*
19CC	D9E340C9C640C9D5		1125		
19D4	C3D6D9D9C5C3E3		1125		
0001	1126	XR1	EQU	1	
0002	1127	XR2	EQU	2	
0008	1128	ARR	EQU	8	
00C0	1129	IAR1	EQU	X'CO*	
0080	1130	SSW20	EQU	X'80*	
0010	1131	SSW23	EQU	X'10*	
0008	1132	SSW24	EQU	X'08*	
0002	1133	SSW2E	EQU	X'02*	
0008	1134	SSW2C	EQU	X'08*	
0004	1135	SSW2D	EQU	X'04*	
0200	1136	MODEL	EQU	X'200*	
020C	1137	SBYTE4	EQU	X'20C*	
020D	1138	SBYTE5	EQU	X'20D*	

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE	STATEMENT
		0216	1139	LINK	EQU X'216*
		021A	1140	PRINT	EQU X'21A*
		021E	1141	UNPACK	EQU X'21E*
		0222	1142	HALT	EQU X'222*
		022A	1143	LOAD	EQU X'22A*
		0232	1144	UDT	EQU X'232*
		2020	1145	DUMP	EQU X'2020*
		0200	1146	SMOD	EQU X'200*
		00C5	1147	E	EQU X'CS*
			1148		ORG X'1FFE*
1FFE			1149	DC	AL2(RTNLDR)
1FFE 0A3C			1150	TREP	
			1151	TREP	
			1152	TREP	
			1153	TREP	
			1154	TREP	
			1155	TREP	
			1156	TREP	
			1157	TREP	
			1158	TREP	
		FFFF	1159	END	

DO NOT MOVE THIS ADDRESS  
ADDR FOR 893 TO RETURN TO FC8







FC00 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

CROSS-REFERENCE

SYMBOL	T	LEN	VALUE	DEFN	REFERENCES
S9	A	002	184C	1111	0114
TABLE	C	001	2001	1109	0337
TABLES	A	001	120F	0824	0851 0852
TR15	A	006	0C17	0115	0112
TRYAGN	A	004	10F5	0579	0586
TWO	A	002	1172	0653	0184
UDT	C	001	0232	1144	
UNPACK	C	001	021E	1141	0984 0997
UPCYLN	A	005	13A9	0895	0883
WORK	A	002	1129	0597	0139* 0140* 0141 0143 0213* 0214* 0215 0217 0240* 0241 0242
WRITE	A	004	112C	0605	0341
WRTX9	A	001	1140	0616	0605*
XKFCX	C	001	2004	1110	0108
XLC	A	006	0E3B	0303	0305
XMSG1	A	001	175A	1074	0161
XMSG2	A	001	177E	1081	0263
XMSG3	A	001	17B3	1084	0267
XMSG4	A	001	17E2	1087	0150 0178
XNE	A	002	0F4F	0384	0396 0405 0420 0427
XR1	C	001	0001	1126	0161* 0167* 0168 017C 0178* 0263* 0267* 0284* 0285 0293 0296 0298 0300 0300* 0332 0333 0337* 0338 0387* 0388 0389 0390 0391 0392 0396 0396 0397 0396 0405 0405 0406 0408 0409 0413 0414 0420 0420 0421 0423 0427 0427 0428 0430 0431 0496 0497 0497* 0498 0636* 0692* 0693 0699 0700* 0715 0716 0720 0723 0724 0728 0729 0736 0740* 0743 084E 0847* 0849 0850 0850 0853 0856 0867 0869 0871 0872 0874 0876 0878 0882 0885 0886 0891 0895 0898 0902 0904 0906 0908 0911 0914 0914
XR2	C	001	0002	1127	0183* 0184* 0185 0186 0186* 0187* 0189 0191* 0235* 0241 0245 0245* 0283* 0285 0390* 0394 0401 0403 0406 0407 0407* 0408 0413* 0416 0418 0495* 0496 0500 0500* 0604 0606* 0607 0609 0610 0612 0612 0613 0626* 0627* 0628 0629 0631 0633 0634 0636 0637* 0689 0689* 0691 0692 0693 0696 0697 0698 0700 704 0706 0707 0709 0711 0712 0714 0716 0719 0719 0720 0724 0725 0725 0729 0732 0734 0738 0741* 0751 0753 0754 0763 0765 0766 0766 0767 0770 0770* 0772 0772 0773 0773 0775 0788 0851 0852* 0855 0855* 0858 0858*
Z1	A	001	1137	0608	1092
Z10	A	003	121A	0781	1101
Z11	A	003	1210	0782	1102
Z12	A	003	1239	0763	1103
Z13	A	001	1249	0768	1104
Z14	A	003	11A6	0696	1105
Z15	A	001	113E	0611	1106
Z2	A	001	115C	0632	1093
Z3	A	001	1163	0635	1094
Z4	A	003	11B8	0704	1095
Z5	A	003	11B8	0705	1096
Z6	A	003	11C7	0709	1097
Z7	A	003	11CA	0710	1098
Z8	A	003	11D3	0714	1099
Z9	A	003	1200	0732	1100

TOTAL STATEMENTS FLAGGED IN THIS ASSEMBLY = 0

DATE 26JUN75  
EC NO. 825023

PROG ID  
PAGE FC8-0 15

FC00 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

OBJECT CARD LISTING

THE CHARACTER . INDICATES A BLANK COLUMN AND THE CHARACTERS D E H INDICATE NUMERIC SHEFT.

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CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

.GBK GBD PN 42 34264 EC 825023 FC7 MICRO UPDATE PROGRAM MOD 15 84888488 ***** FC800000
T+-Y:MH BSC 0000 <D ALL DA SDA SDA SDA B/O A |==|E QL=HAG00 KEV8MOTYM -7 /0M DB(- I1MFC800001
T+-Z5U00K8/MOPT3 *FDB88 H(| HVL- -B-72UDD8M Y+0I .Z+8G /Z8|-,9E|= /DME T<..CBG /Y 6JEX =EBFC800002
T+-D0+*8G SHI=3- B -72DABBA H(OA .. OCE90.V|HGFO 8M Y+0A ..CBGB=U 8A H(OI .Z6OCB90 .ZK 188FC800003
T+.. /DME SX.XCB GBV5 8>TS88PNE<T A8UCB5>|HE+|H1MC 5*|L46<GN1DC38*L 06<LI8_I 1<PF2)P E1D 46VFC800004
T+-XW2)N 8_-UB4C T0*.L1M_ 5*|E0:;. EE<XD1|PT2+8YE<X N5=LY6<LE9*XC1MC F5_V 8>TS88PNE<L 18_M 01-FC800005
T+_/E(-AD*I.L+| U6)N 5_N 5_PL:DC CS*N 8XPNE8N 8>8 188|HEE1*8+.S9UC 21MCF5_V 'L4'DA *PD 088FC800006
T+->+8>.W6|.DE<S 06MC38*L0K4CF5>L N1DCT2<GTE+.S9UC 21DCA5*J 8>.W6|. EE<GR1NCES>|HEIS FIUX 1-8FC800007
T+-7PS88FK*8NE8X 8N DN8Y)(|C<HV*8 G /YG+ 780M+8HYX *8Y+8G(-L0+|E6+. YE>|ESDCP0*|K6IS HE<S 0.MFC800008
T+-0K6*8V1NC2K4A 5<K6K1MCR1*8D:0_ 8(XE88PTE<TA+=( |_-A|HACLOJC_8 < 8:2FD82/0Y8888 -C 0 888FC800009
T+-1(C.MQL 0 C>0 +73-B/GZDF-86J/ D|D0888G /YA|AS .|<Q0ET30PM? /0M 8 LOOS88G /YFE/S /0M 8 LAFC800010
T+-2M SHI*3 DKU #8ADZ|E JH-HA1L4 A6KX 8OUCA801JS /0M+8F-DPE*7 /0M 8AS-01*8G SHI8C2 #C|S =.MFC800011
T+-3CBY|K0-0P0TD DC8 /0M.OH*8688 GC5C A 2<|8D|K44 AETM 8YD<860P:0C 2-K. /02<|.E<*C4 38ZN JKUF800012
T+-3=8YDP+Y 818H AE=. /0M.OH*868H GAC2:C|LB /-V(-H J*TEBC|05 - 6 /E 08YD.>0- 0-H <8 GC+H 898FC800013
T+-49+8 HD-HEY*8 G /YAKATZOH*8F-D )FES /DHEA/00Y*8 G SHI*3 DKU#8AD Z|8DJH-HAYL4 DKX 84 EL-FC800014
T+-54A88G /YAE1V 10M+8F-D1FEP /0M 8ASXR) 0EE8MPL3 1CO8B /)(0M+8HYX 1< JH00 ADZ|M JH-M =/8FC800015
T+-6T-JD+ 8WDPC S -D*05M0 D(O60 EF*8PN88G /YA|JX 8OH*8F-0DPHE /0M SS-C2/6.8 J)=+Y 81TY 3-8FC800016
T+-7D-ACC0M+|28M AEB| /0M.+8 83 8 AD<863X8G0|T /0' 8BY6|C NPM-78BY* 8057N0* XI|8M|K*8 DC|8 8MFC800017
T+-8VC NPM/3RC +AD*IC +A-*10-H PLLMAC4S 0 C D J)J)<0M+JL/8ADPN 8OH*JLTO<ES('*OC 2-K* 8JHFC800018
T+-9-L8MPE8-2-E7 K JH| A1LDPC 88 -C-DJ)JE:8F J)* 8CTY /0800M+8F8> >CDHI=88G SHI=88 G /0 -IUF800019
T+:-80H*8F*8C_S 1*88G SHI*88G /8 C5>LL1DCAS>| 18X N1DCH2+|85WCCSXL EE(884*PC84CF2)| EE(0 3 MFC800020

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DATE 26JUN75  
EC NO. 825023

PROG ID  
PAGE FC8-0 15A

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+R05MCD2:K5+ MI)XEG<GR)MCN5>( 9=) 8NPCB<SR)BUC AA+|D08GT1+J 8'R S<XG6)R-0\*8D1MA 1XU 9#DFC800021  
T+R1438# JESBG4 E<BBCHDB A)I(6D -L6ACT0<1)H C /1DXC0D+D.C0 PH1E00 D+8+86 /Y GH-8 LL<FC800022  
T+R1<6CBG /SM2+| REWCC5XLE<TABUC B1+PN6<(058XE1DC TSUCS:+.TI)J 586 CAU HD0Y+8/K ..NFC800023  
T+RGA A0-D|EXE M:TRBAG3\*AAAAA Y -BYJ-TH 8-DGP-D DC)BEM4AA Y-BYE +TH 8YD0DX BYD 6P- 08DFC800024  
T+RBA054 -85 -E 4 -L6/3A5 -J( 66 HG\*MOD.5 |MAE85 . |MAE8A.J 5\*0~ 2-6(5A 7 /0 P-D DC) 08DFC800025  
T+R/5J5A X6/7- 4B \*00M+|5886 8\*0/9E/ FOM+8MYX X||8M1+D0C=\*2/03 3FHC3F+ (G0\*SC\*M 8-A 78 FC800026  
T+R/ 817866TP D( 3F C50ACNBICA0M+ 6UT> D<82A2UBA/C 6<J 83T8D<(1D/C I(+ 65-<6U+8GDIM | A :Z<FC800027  
T+R/811E0C D8N32 GDAUB6 T\*CHM+T \*0-MH-10 CK 6E . C2-6-5 -6 /1A K<JX643D6D<81D/C I<JM 3-0FC800028  
T+R/B>D(D80ACNB18 JCH+GUTS D<32U 0 + JC+D<X /0\*L( - 6.CS D(8 UABD+8 65TUMD(-2U L /0 0M+ :-#FC800029  
T+R/CZ SHI:<B6CH0 :-ACD<A066|<0 88 6C.8 A6 U R H-AE7 D.8 48ADK|D H\*0288|8 H\*3D 68MFC800030  
T+R/DUD/C<JK|8TD 6D(D80ACNB1-AB1 0\*#EUTP D(P /18 K|L466< AD|H50AC N81AJ0M+6U-0AC40 |GX K/\*FC800031  
T+R/E~/0 C\* C6 HCH78 /ERB+8B.0 G:8G| D> J0/>F \*CA J|886 CB /E 80-HJ08HEI8G| S 8 AA ).#FC800032  
T+R/FEBH+88NA.4M B C /0 D - B D J-0 |8M1R.DOU D8B DMS 5> 4818 =:DFC800033  
T+R/GH<F-M +J <B 6D.61./6/Y+00.-M 9A085 6P2UDS1./7 3D6G/YU>9 132D 2 1.-73D C/YVD8 AG 1.-M 88MFC800034  
T+R/HG~ CBS AG-M AH|HDB:0 /16~ M# AEY+.:-DEX BG EB /158 ++ A4AXE0 LB: 8EHL10D88EB X0-D 88UFC800035  
T+R/I. CB /ER4H# AX88N8:UAG8H\_76H CBY00CH+8FZ+D.2 I<CBG SHI+.F>D-M G #0AED0ABR-/~2M H\_8H \*J#FC800036  
T+R/HFH10AX0WY /U CBH+Y0M+8F3+2D22 I\*88G SHI\*BGHEL 18\_I 5)8T6(XE0+L YE4CH0).E6<816FE 6~D 194FC800037  
T+R/A6(XE04LY6<G NIDCR11.E84CH0| T6<L18\_I 1)XRE\_V 6L(XE8XPT6<TA4=( 8'R 64PT6;/ |L< HV\* 08DFC800038  
T+R/8 JFMC UN8A0 B<<486<GMEHUB AP PON+L<S DEA- C+8 32MXH80 ..... CB 6 /DG<1<10M+8MYX :0M+ JH4FC800039  
T+R/K7 /8L5+8B48N 8'R 0\*8N9+PR84C 5\*|L46<GC1(XEB>I 2)PTSUCAS|3\*|A 04LD6+P3EUT8 J. YC D \*RDFC800040  
T+R/(ZD+YJ)M0 AM DP CACH6C\_8D | 2U |S -J8B |2D | S -HX A(1 0- A B 88 A:8 L2D (8B J 8 =4+FC800041  
T+R/\_6EA8YH+88 A0 HK888 J.:8YH Z-6 ABYD8L- CPA | DK7-HBE8G8B/ . G J. BY+(L- DP K5-FC800042

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

T+R/Y8Y+EL- AD\_4 8 J.X-6 8BYD/1H 88Z EL0 8D\_.. /A.-C- K91E0L0 8D\_3 J|.L BD>8 < AM P<FC800043  
T+R/8T6J.YC N61. ZC N7A.DC N=AM D+M-N= 0 EE-N= 8 EE-N\*8GHE 813/P +<0NA||H <GIEA7 A2/6 W3NFC800044  
T+R/J1M+GHEI8<BJP 4E: < JP3E-013/P K<<CN4||I \*8MEDC AZAK<+ HNB-M8E86 +E\*813APMB8U 0+V MODD ELOFC800045  
T+R/KRZAKNOHMKC30 AEI08 JPP0+VM8TG +E)C32 CA2JJ90+V H+8GHEI8 /16\*8Y+ /CACH-A068Y+8CAC N-AM :14FC800046  
T+R/LNZ|H6C00LEPO ND|HGA-0LEP0N3CB 6 /8B+/N85-88EAM 8CANN11NB<<466CB 6 /88D(-NI+8G /D 8F/M 138FC800047  
T+R/M|I+GHE(013AP 888UG0+VM8+GHEI- /OH1FAQE8EU. /OH E-14N6886 /DF<AR H0H+8MYX+8CH+8EUC 588D 5/#FC800048  
T+R/NH8=L86<.Y88P 86|A.8MCA6M 9=- X94R1\*8D6<LI0+ 8>|A8=L86<.Y88P 86<GRINA 6<LI8\_I 11U 08DFC800049  
T+R/DE2:PE8DC26(P 08+CR1+8D:DA/6+L N2:( C8TEC\*I 8DA 6DA 6DA 6DA 6DA 6DA 0\*8T1)V 64M 0L6FC800050  
T+R/P 0+J 2<E HDC R8D\_ 0\*8T1)V 6+J /9\_XT6<LAB8E K4C A1>|E6MCS1+PK6<| 05(LA5+J.6<G88P 86(U 8K8FC800051  
T+R/P#1+8D6<LI0\*) 0\*LDE)N8JP.EUX 0 0 ..... N2 D ..... 8.YFC800052  
T+R/AB D ..... :14FC800053  
T+R/I / 8DA 6D 8DA 8DA 9XKL44C S:+.TI)J 588C4UC R9(N 1\_XD8DCR8NC 06MCF808 18XV1MC T2<N EC8FC800054  
T+R/- 6(PA5<N 58R :|6U6MCS87-76DC H2+|88CC8LE8DC 00\_GE0=( 1XKLM 2:| 9XKL44CDI+8 A9(K \*1MFC800055  
T+R/#8ACTSUA 087 M0\* X16<XF6(P86(P A5<N 2:| 18XV1)M 6\*|A08N 8>T88P M6(-A0\*I 8\_N 6-E /1)H 904FC800056  
T+R/-6E4CP5>8E8NC U84CD21.K6<GN1DC P6+PS8UC85:|E6NC C8NCT2<N 8\*-7\*4X 0LQJ01E8D8-J>16 6D\*V \*88FC800057  
T+R/ID|K AMED/4 K+JINDEQ|JHC+M 0=-67 <XF6+.Y8>| E8DCP0+|K6+814\*| 0XN 8\_N 6-E.8+. E84 886FC800058  
T+R/SX6+XG2+|M5>. T6<LAB8E 8>8188| M6+|06|GR11.E84C H0|T6+|06<|05:| 18:LE2+R 8>T88P M6(8 81+FC800059  
T+R/TX0+|K6(LI0\*X 00<|01<N 8XJ1+| T6<8I48M 5+GN1NC 18U80\*LC6+V.6+. E84CD0:|A6+.M6|J ~U NJUFC800060  
T+R/US8M788TE618 18XN.6+.E84CD0:| A6+.M6|J ~UCOK8P N88PR6<8I48N 5+6 M1NC16<|H0)V.6<G T6<D 30 FC800061  
T+R/V)6+|I5<N 2)M 1+.C1<XG6<|01<N 9+.15+| 1<GT8NC 89UC3E=M.J.6+PS11:| 2<GL8=I 17E-17R 0)H :L0FC800062  
T+R/W8<PA08/ 08T A6M\_ 2:| 1)PT1)X E1D7H0:).6(PA5<N 2:| \*UCC2<GRK4A 0\_|A8)1 9XKL44C T1)U 08MFC800063  
T+R/XL5<XN0:|E8<F N8\*XYK88I48N 5+6 M1NCT8UCB1NCU8NP D6<X86+~N8~X9A\_ 6(XEB>|A6:| 2+R 2)M \*J6FC800064

FC80 MOVE FC7 MICRO-CODE FROM DIAG PACK TO SYS PACK MOD 15

OBJECT CARD LISTING

CL 1 THROUGH 16 CL 17 THROUGH 32 CL 33 THROUGH 48 CL 49 THROUGH 64 CL 65 THROUGH 80 CL 81 THROUGH 96

TA/XE01SR6#PC80 ..... E2HFC00065

T J#BTO ..... ST-FC800066

\*\*\*\*\* ..... FC800067

\* THIS PROGRAM COPIES THE FC7 MICROCODE TO A SYSTEM PACK. IF THE SYSTEM PACK IS \* FC800068

\* ON A 3340. IT MUST BE ON D2 AND R1 AND F1 WILL REFER TO THE 3340 SIMULATED AREAS.\* FC800069

\* THE PROGRAM WILL FIRST CALL IN 893 AND CAUSE THE FC7 MICRO CODE TO BE LOADED. \* FC800070

\* IF THE 3277 OPERATOR CONSOLE IS INSTALLED, KEY IN THE REQUESTED INFORMATION AND \* FC800071

\* INPUT IT BY DEPRESSING ENTER. OTHERWISE, FOLLOW PRINTER INSTRUCTIONS AND SUPPLY \* FC800072

\* DATA THROUGH THE CONSOLE SWITCHES. \* FC800073

\* CAUTION: USER MUST BE CORRECT BEFORE RUNNING THIS PROGRAM. \* FC800074

\*\*\*\*\* ..... FC800075

E#E7#DC#PMS #7H&F| | C F# ASC R A SO G 09320608730 62675#Y0FC800076

----- LAST PAGE -----

